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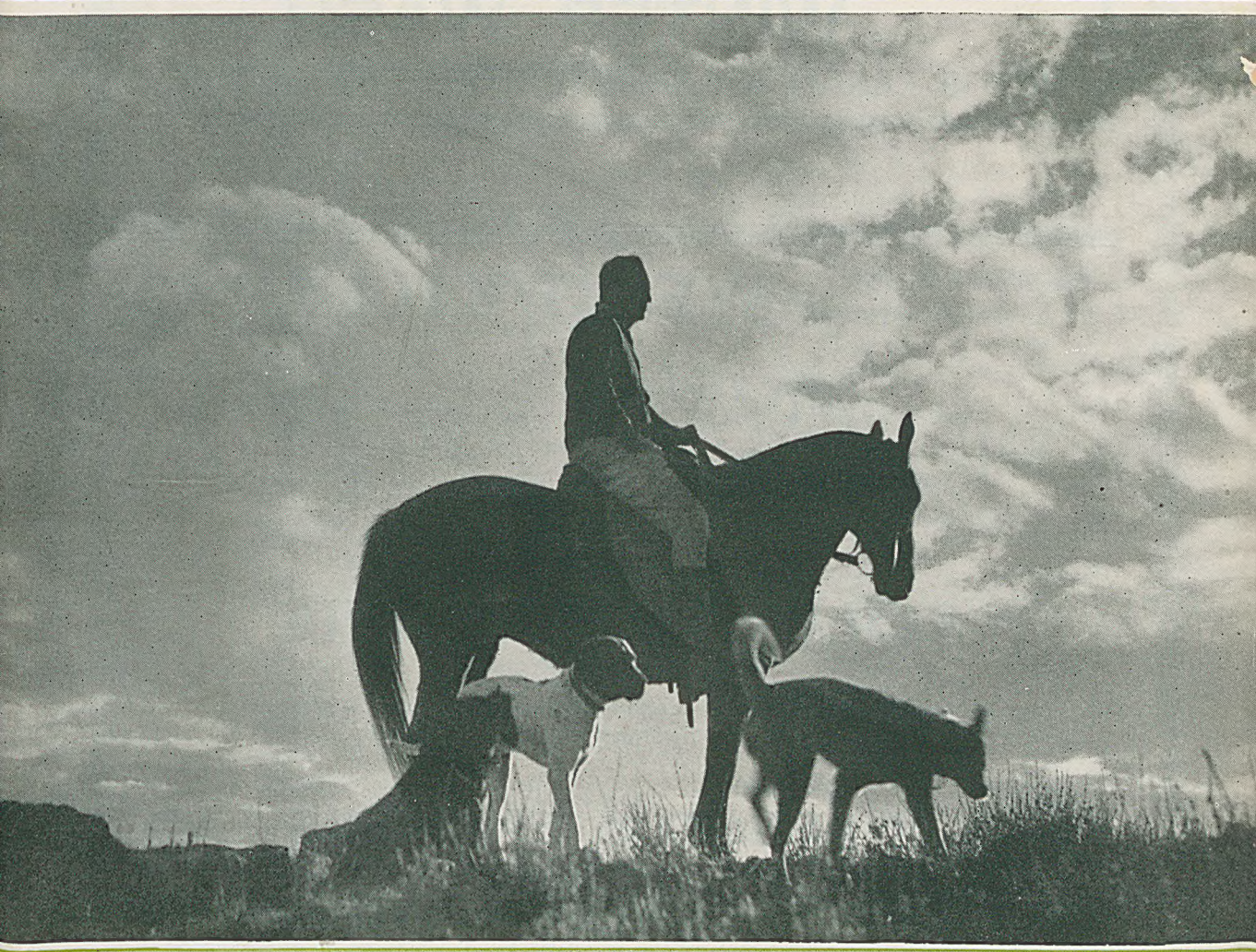

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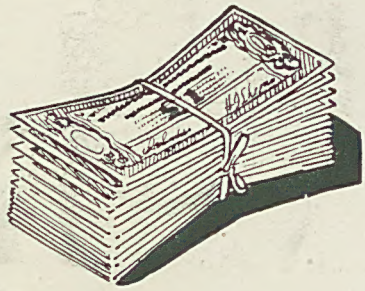

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Contents.

JUNE, 1938

		PAGE
Appraisal and Judging of Pig Carcasses—Dr. Hammond's Demonstration	..	261
Tubercle Free Herds	..	269
London Markets	..	270
Rochester Irrigated Pasture Competition, 1937–38	*E. T. Beruldsen, B.Sc. (Agric.)*	271
Australian Publicity Abroad	..	275
All Australian Baconer and Porker Competitions	*H. R. Davidson and Jos. B. Swain*	276
Wheat Crop Competitions—Wimmera Championship	*A. B. Hackwell, B.Agr.Sc.*	283
Butter Production and Export	..	284
Potato Manurial Trials	*J. T. Ramsay*	285
Fungicides and Insecticides—Brands Registered for 1938	*W. C. Robertson*	289
Corky Scab in Otway—Minister's Successful Measures at Eradication	..	301
Orchard and Garden	*J. L. Provan, B.Agr. Sc., and A. W. Jessep, M.Agr. Sc., B.Sc., Dip. Ed.*	303
Standard Herd Records	..	307

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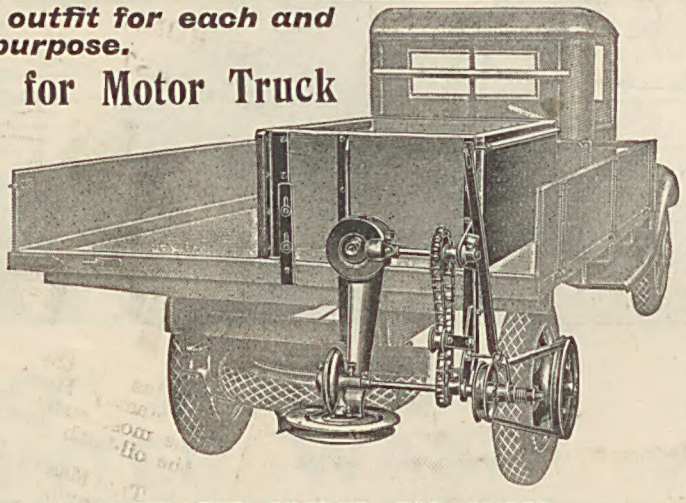

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INDEX TO ADVERTISEMENTS

FRONT SECTION

Commonwealth Serum Laboratories ... vi

Gippsland and Northern Co-operative Coy. Ltd. (Seeds) ... ... opp. p. 271

Goodyear Tyres ... ... opp. p. 270

International Harvester Coy. of Australia Pty. Ltd. (Tractors) v

Law Somner Pty. Ltd. ... ... opp. p. 279

Leggo, Victor, & Farmers Ltd. ... inside cover

H. V. McKay Massey Harris Pty. Ltd. ... iii

Robinson, T. & Coy. Pty. Ltd. ii

Rylands Bros. (Aust.) Ltd. iv

Vacuum Oil Coy. Ltd. ... ... opp. p. 278

Wills, W. D. & H. O. (Aust.) Ltd. (Right Angle Tobacco) ... iv

BACK SECTION

Australian Cement Ltd. ... ... inside cover

Bodington, R., Pty. Ltd. (Seed Cleaning Machinery) ... ... opp. p. 303

Cockbill, J. vii

Commonwealth Fertilisers and Chemicals Ltd. opp. p. 303

Dunlop-Perdriau Rubber Co. Ltd. ... opp. p. 294

Elder Smith & Co. Ltd. (Esa Bluestone) ... vii

Friesian Bull Calves for Sale xi

Gerrard Wire Tying Machines Co. Pty. Ltd. vii

Hardie, James & Co. Pty. Ltd. ... opp. p. 295

Lysaght Bros. & Coy. Pty. Ltd. ix

Neptune Oil Co. Pty. Ltd. ... opp. p. 302

Queen's Bridge Motors (Tractors) opp. p. 295

Red Poll Bull Calves for Sale xi

State Savings Bank x

Stud Breeders' Cards viii

Trewhella Bros. Pty. Ltd. x

Victorian Railways viii

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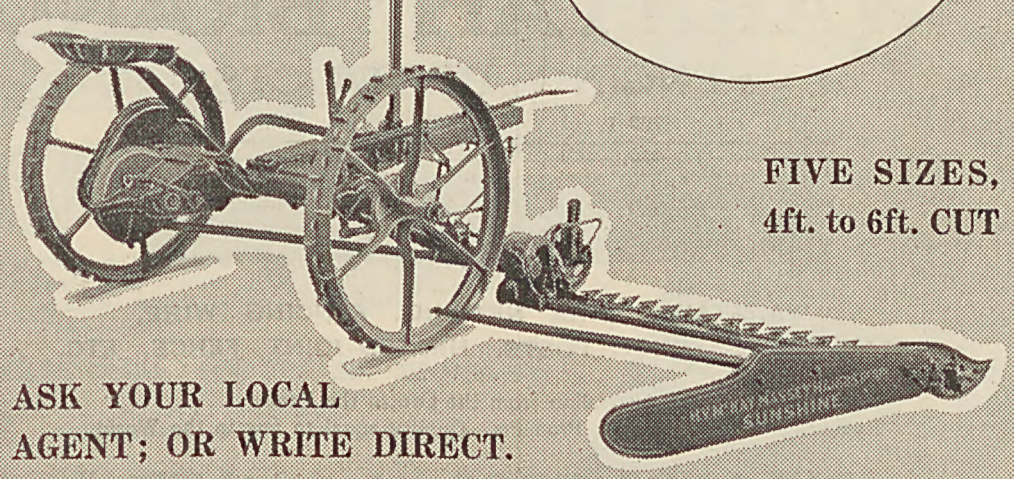

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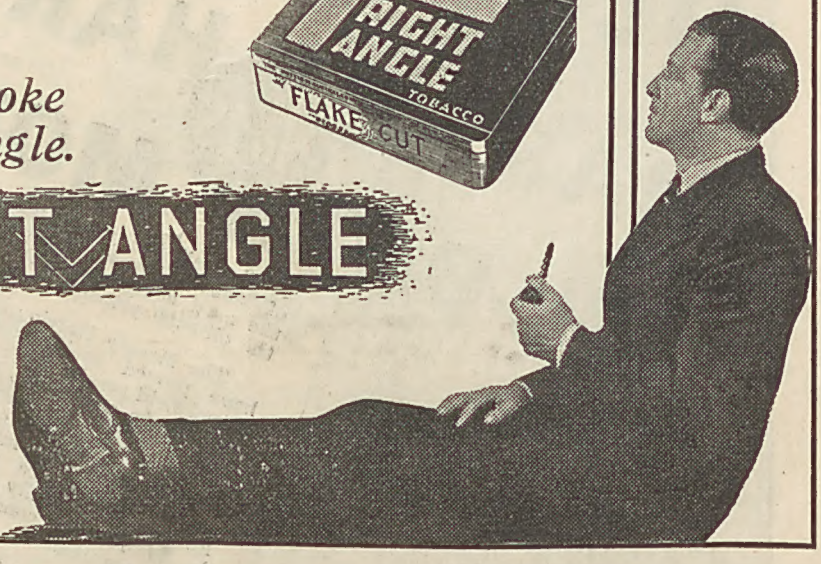

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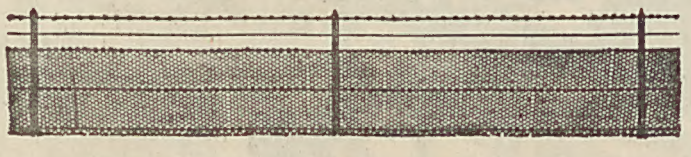

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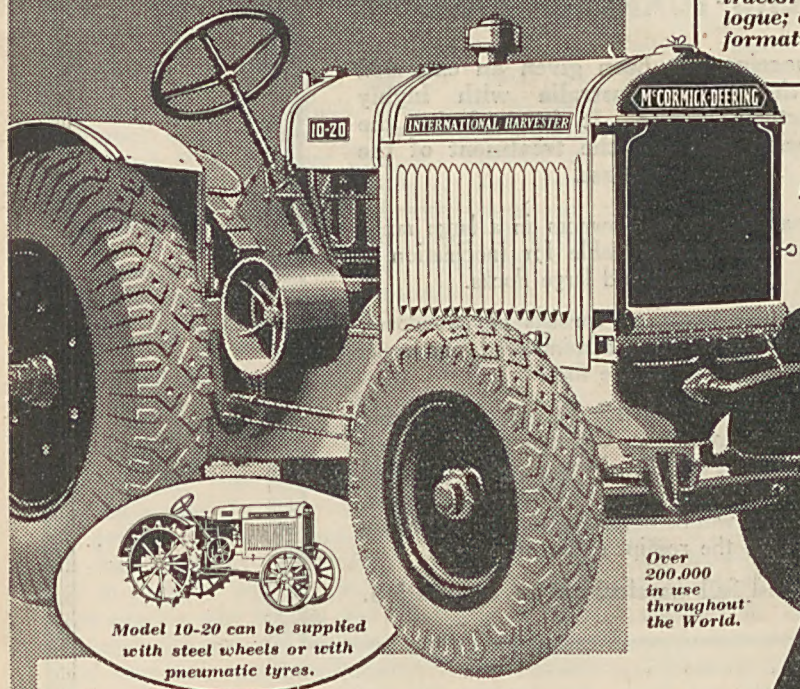

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The Journal of the DEPARTMENT of AGRICULTURE of VICTORIA

Appraisal and Judging of Pig Carcasses

Dr. Hammond's Demonstration

A DEMONSTRATION by Dr. John Hammond, of Cambridge, of the Appraisal and Judging of Pig Carcasses arranged by the Australian Meat Board in conjunction with the Council for Scientific and Industrial Research and the Department of Agriculture, was held at the Braybrook Works of Messrs. Western and Murray Bacon and Meat Packing Company Limited on Friday, 8th April, 1938. Judging was done according to the method used with frozen carcasses in London for the introduction of which Dr. Hammond, with others, was responsible.

Dr. Hammond, who was introduced by the Manager of the Works (Mr. A. McKellar) and the Director of Agriculture (Mr. H. A. Mullett), pointed out that he was looking at the subject from the point of view of the English consumer. We wanted to produce exactly what the consumer liked best, and what he liked best was called good quality. The trouble was that in carcass tests as a rule the man who won knew that he had got the right stuff, but the man who did not win was no wiser. What they had tried to do was to judge a pig so that the producer might know exactly why his pig was not right—in what respect it did not suit market requirements. He could then take steps to improve that particular point and bring it right. Since this method had been in operation, there had been a marked improvement in the quality of pigs. The various classes of pigs required for the London market were, (*a*) small porker on a carcass of 60 to 80 lb., (*b*) heavy porker, of about 80 to 100 lb. while bacon pigs run from 140 to 169 lb.

Dr. Hammond then went on to explain the system that had been evolved for judging carcasses. With other workers he has devised a scale of points in which 100 marks are awarded for those points which deal with breeding and feeding. Marks for appearance, marketing, and for the suitability of weight classes are given over and above this total.

Marks for suitability of carcass weight have only been given for bacon carcasses in which the matter is more important than in the case of pork.

The scale of points drawn up for judging the carcasses comprises two sets of marks—(1) *Marketing Points*, which for the most part, consist of defects which may occur in the industrialization, dressing or transport of the carcass and which affect the price realized by affecting its appearance when exposed for sale. (2) *Breeders' Points*, which consist of defects caused by the breeding or methods of feeding and management adopted on the farm. These two have been kept separate so that, in cases where one or other only is required, they can be used independently. The Breeders' Points have again been subdivided into (*a*) those which are based on visual judgment —Inspection Points—and (*b*) those which are based on measurement—Measurement Points.

The scale of points and marks adopted for both pork and bacon is shown in Table I.

The relative number of marks given to each point has been carefully considered according to the relative market value of the point. For example, a carcass poor in the "eye muscle," or thickness of lean meat, can drop many more points than one which is thick in the shoulders. The sum total of the points therefore represents the desirability of the carcass from a market

point of view. The standard set is a high one, and any carcass which obtains over half marks on any point is a good one in that respect.

TABLE No. 1.

	Marks.	
	Porkers.	Baconers.
(1) Marketing Points—		
Colour—clean, fresh, white ..	5	5
Skin—smooth and fine ..	5	
Dressing—freedom from bruises and hair	5	5
	15	10
(2) Breeders' Points—		
(a) By Inspection—		
Hams—well filled and fine boned	8	8
Shoulders—light ..	7	7
Streak—thick, full of lean meat	12	12
(b) By Measurement—		
"Eye muscle" of loin—thick	28	28
Back fat thickness—correct proportion ..	20	20
Body length—in proportion to weight	20	20
Leg length—short ..	5	5
	100	100
(3) Suitability of Carcass Weight ..	..	15
Total Marks	115	125

Judging in Three Stages.

The judging is carried out in three stages :—

(*a*) The carcasses are weighed and are hung up in a row with their backs to the judge. The Marketing Points (Colour, Skin, and Dressing) and the Hams and Shoulders of the Breeders' Points are then judged.

(*b*) Each carcass is then sawn down the middle line, and the Body Length and the Leg Length are measured with a tape measure graduated in millimetres.

(*c*) One side of each carcass is then sawn straight through at the level of the last rib, and the hinder ends are laid out in a row with the cut surfaces facing the judge. On the exposed cut surface the Streak is judged, and the "Eye Muscle" and Back Fat are measured by fine pointed callipers and read off on a wooden ruler scale in millimetres.

The level of the last rib has been selected to make this cut, for not only does it expose the most valuable part, but also the latest developing part of the carcass. A part which grows late during development of the animal forms the best index of the state of the development of the carcass as a whole.

Where the method is employed for reporting to overseas senders rather than for carcass competitions in Great Britain, photographs of the carcasses arranged as described in paragraphs (*a*) and (*c*) above, together with the score card of the measurements and marks awarded, form a means of keeping a permanent record of the experimental, consignment or competitions. In practice, these are sent back to the Government Departments, Recording Societies, Agricultural and Pastoral Associations, and producers concerned so that they can see for themselves in how far their pigs are meeting the demands of the consumer.

The Scale of Points Explained.

A brief description of the points and the method, used in judging them is as follows :—

(1) *Marketing Points :—*

Colour (5 *Marks*).—The colour should be a clean fresh white. Points should be deducted for dark colouration due to pigmented skin, sunburn before slaughter, or excessive drying in storage, as well as for the dead white blebs found as faults in cold storage.

Skin (5 *Marks*).—The skin should be smooth and not too thick or coarse.

Dressing (5 *Marks*).—Bruises and weals due to fighting before slaughter should be absent. There should be complete absence of all hair and absence of scraper cuts in the skin. The method of allowing the fore legs to hang naturally is preferable to hooking them back, as the latter makes the shoulders appear heavier than they are.

(2) *Breeders' Points :—*

(*a*) *By Inspection.*—For these photographic scales are used (see Figs. 1, 2, and 3).

Hams (8 *Marks*).—The bone should be fine and the ham well filled out with lean meat, the space between the legs being U- rather than V-shaped. The hams to be judged are compared with the photographic scale of hams (Fig. 1) which shows the shape for maximum (8), minimum (1) and intermediate (4) marks, to be awarded.

Shoulders (7 *Marks*).—These should be light in proportion to the rest of the carcass for it is a low-priced part. In judging, the shoulders are matched against a photographic scale of the shoulders (Fig. 1) which shows the shape for maximum (7), minimum (1) and intermediate (4) marks, to be awarded

Streak (12 *Marks*).—Not only should the belly be thick, but it should contain a high proportion of lean meat. Comparison with the photographic scale (Figs. 2, 3) is made. The maximum marks (12) are given for a streak which is *both* thick and full of lean meat. The minimum marks (1) are given *either* for one which is thin, *or* for one which is thick, but which contains a high proportion of fat. Illustrations of intermediate marks (6) in each case are also shown.

(*b*) *By Measurement*.—Measurement in millimetres rather than in inches (25 millimetres = 1 inch) has been adopted for the sake of greater accuracy and the avoidance of fractions. Since the actual measurement will vary with the weight of the carcass, Tables II. to V. have been drawn up for different weight groups. From these tables the marks corresponding to any particular measurement can be read off. In the case of thickness of eye muscle and length of body, the highest marks are given for the maximum measurement, and in the case of the length of leg for the minimum measurement. For thickness of fat, on the other hand, as for suitability of carcass weight, the highest marks are awarded for an optimum measurement.

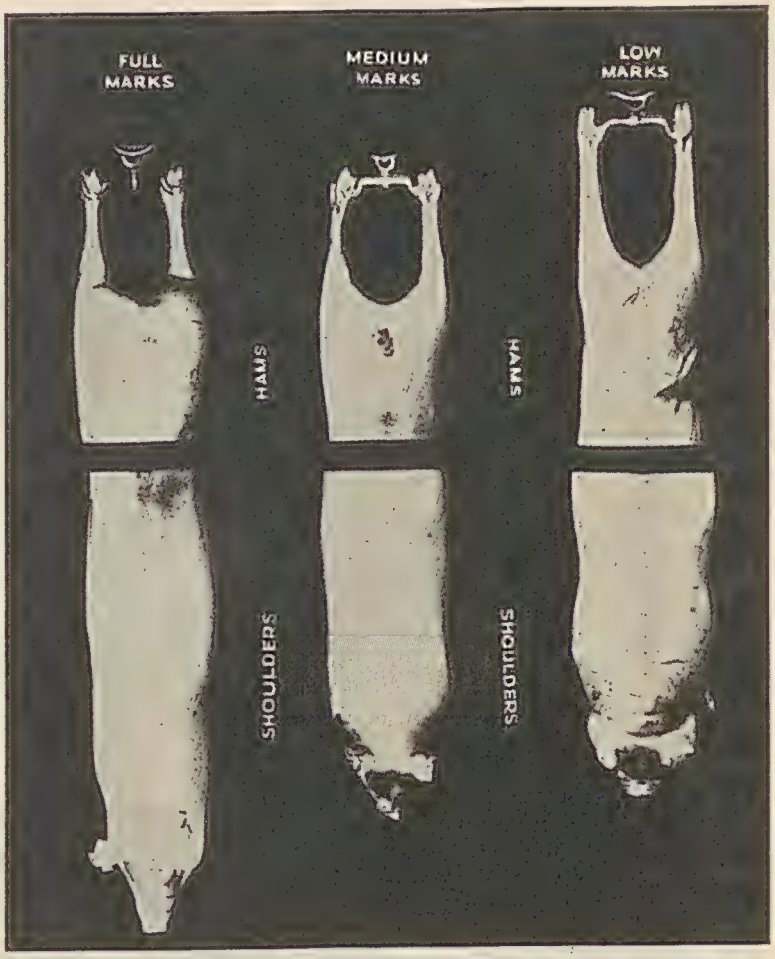

Fig. 1.—The photographic scale showing the standard required in judging hams and shoulders by eye appraisal.

"*Eye Muscle*" *of Loin* (28 *Marks*).—The thickness is measured half way along its width (see Fig. 4). This gives the best measure of the thickness of lean meat throughout the carcass. Different carcasses vary much more in the thickness than in the width of the muscle, so the thickness has been selected as the index of lean meat. The scale for converting measurements to marks is given in Table II.

Back Fat Thickness (20 *Marks*).—This is measured 1 inch for porkers and 1½ inches for baconers from the middle line, with one point of callipers at the edge of the "eye muscle" and the other just on the inner layer of the skin (see Fig. 4). This gives a better measure of the amount of fat in the carcass than does the measurement of the fat at the shoulder, for it is the last part of the back fat to develop. Fat differs from all other points for marking, inasmuch as for each weight group of carcass there is an optimum requirement of back fat; there can be too little as well as too much. Consequently the scale for converting measurements to marks (Table III.) unlike the others, is extended on both sides of the optimum. In the case of pork, if the carcass is too fat the rind and the fat down to the required thickness has to be removed. It is therefore more profitable to supply this small pork, for which there is a growing demand in industrial areas, with the right amount of fat, so that it can be sold direct to the consumer with the rind on. At one time we considered the measurement of the thickness of the back fat from the point of the "eye muscle" farthest from the backbone

TABLE II.—MARKS FOR THICKNESS OF EYE MUSCLE OF LOIN.

Measurements in millimetres.*

Carcass wt., lb.	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 99	100 to 109	110 to 119	120 to 139	140 to 159	160 to 179	180 to 199
Marks													
1	23	24	25	26	27	28	29	30	31	32	33	34	35
3	24	25	26	27	28	29	30	31	32	33	34	35	36
5	25	26	27	28	29	30	31	32	33	34	35	36	37
7	26	27	28	29	30	31	32	33	34	35	36	37	38
9	27	28	29	30	31	32	33	34	35	36	37	38	39
11	28	29	30	31	32	33	34	35	36	37	38	39	40
13	29	30	31	32	33	34	35	36	37	38	39	40	41
14	30	31	32	33	34	35	36	37	38	39	40	41	42
15	31	32	33	34	35	36	37	38	39	40	41	42	43
16	32	33	34	35	36	37	38	39	40	41	42	43	44
17	33	34	35	36	37	38	39	40	41	42	43	44	45
18	34	35	36	37	38	39	40	41	42	43	44	45	46
19	35	36	37	38	39	40	41	42	43	44	45	46	47
20	36	37	38	39	40	41	42	43	44	45	46	47	48
21	37	38	39	40	41	42	43	44	45	46	47	48	49
22	38	39	40	41	42	43	44	45	46	47	48	49	50
23	39	40	41	42	43	44	45	46	47	48	49	50	51
24	40	41	42	43	44	45	46	47	48	49	50	51	52
25	41	42	43	44	45	46	47	48	49	50	51	52	53
26	42	43	44	45	46	47	48	49	50	51	52	53	54
27	43	44	45	46	47	48	49	50	51	52	53	54	55
28	44	45	46	47	48	49	50	51	52	53	54	55	56

25 millimetres = 1 inch.

to the skin, as it is here that the thickness of the fat shows up in the cut. Agreement was good when all measurements were taken by one person, but not when they were taken by different persons, for it is more difficult to judge the exact point at which the measurement should be taken here than in the place which we have adopted.

Where you get a short pig, you usually get a fat one, said Dr. Hammond. Where a man is a feeder of pigs and is sending pigs into both the pork and bacon trades, he would be advised, when the pigs are about pork weight, i.e., about 100 lb. live weight—to go round and pick out all the short ones and send them to market. If he keeps them on they will get too fat, but at pork weight they will be of good quality. The longer pigs should be kept and marketed at the heavier weights.

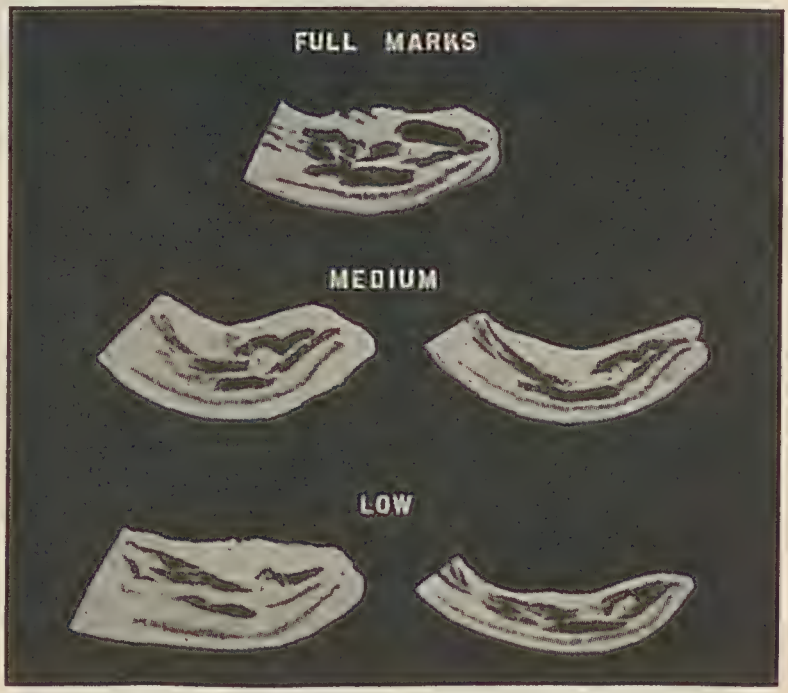

Fig. 2.—Standard for award of marks by eye appraisal—Streak (Baconer).

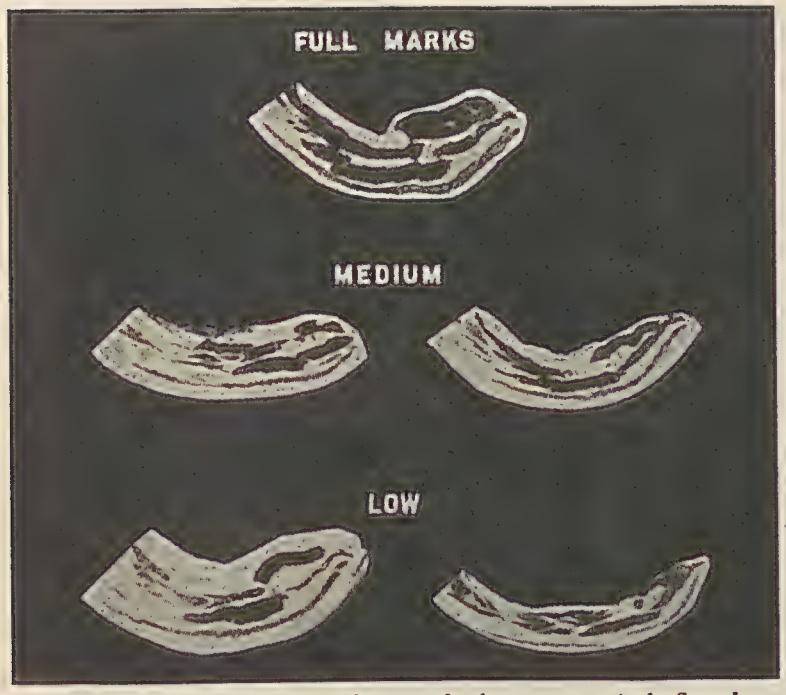

Fig. 3.—Standard for award of marks by eye appraisal—Streak (Porker).

When dealing with a mixed variety of pigs this is the best system to follow in order to get the best quality out of both markets.

Body Length (20 *Marks*).—This is measured with a tape measure from the edge of the symphysis pubis bone to the junction of the sternum with the first rib (see Fig. 4). It gives a measure of the length of the valuable loin joint which can be cut off the carcass. A high proportion of this to the weight of the carcass as a whole increases the value of the carcass for cutting purposes. The scale for converting measurements into marks is given in Table IV.

Leg Length (5 *Marks*).—This is measured with a tape measure in a straight line from the edge of the symphysis pubis bone to the tip of the toe (see Fig. 4). When taken in relation to the

TABLE III.—MARKS FOR THICKNESS OF FAT OVER LOIN.

Measurements in millimetres.

Carcass wt., lb.	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	110 to 119	120 to 129	130 to 139	140 to 149	150 to 159	160 to 169	170 to 179	180 to 189	190 to 199
Marks														
1	1	1	2	3	4	5	7	8	9	10	11	12	13	14
4	..	2	3	4	5	6	8	9	10	11	12	13	14	15
7	2	3	4	5	6	7	9	10	11	12	13	14	15	16
10	3	4	5	6	7	8	10	11	12	13	14	15	16	17
12	4	5	6	7	8	9	11	12	13	14	15	16	17	18
14	5	6	7	8	9	10	12	13	14	15	16	17	18	19
15	..	..	..	..	..	..	..	14	15	16	17	18	19	20
16	6	7	8	9	10	11	13	15	16	17	18	19	20	21
17	..	..	..	..	..	..	..	14	16	17	18	19	20	21	22
18	7	8	9	10	11	12	15	17	18	19	20	21	22	23
19	8	9	10	11	12	13	16	18	19	20	21	22	23	24
20	9	10	11	12	13	14	17	19	20	21	22	23	24	25
19	10	11	12	13	14	15	18	20	21	22	23	24	25	26
18	11	12	13	14	15	16	19	21	22	23	24	25	26	27
17	..	..	..	..	..	..	20	22	23	24	25	26	27	28
16	12	13	14	15	16	17	21	23	24	25	26	27	28	29
14	13	14	15	16	17	18	22	24	25	26	27	28	29	30
12	14	15	16	17	18	19	23	25	26	27	28	29	30	31
10	15	16	17	18	19	20	24	26	27	28	29	30	31	32
7	16	17	18	19	20	21	25	27	28	29	30	31	32	33
4	17	18	19	20	21	22	26	28	29	30	31	32	33	34
1	18	19	20	21	22	23	27	29	30	31	32	33	34	35

TABLE IV.—MARKS FOR BODY LENGTH (SYMPHYSIS PUBIS TO FIRST RIB). (Measurements in millimetres.)

Carcass Weight, lb.	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to 109	110 to 114	115 to 119	120 to 124	125 to 129	130 to 134	135 to 139	140 to 144	145 to 149	150 to 154	155 to 159	160 to 164	165 to 169	170 to 174	175 to 179	180 to 184	185 to 189	190 to 194	195 to 199
Marks																												
1	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820
2	555	565	575	585	595	605	615	625	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825
3	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830
4	565	575	585	595	605	615	625	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835
5	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840
6	575	585	595	605	615	625	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835	845
7	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850
8	585	595	605	615	625	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835	845	855
9	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860
10	595	605	615	625	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835	845	855	865
11	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870
12	605	615	625	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835	845	855	865	875
13	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880
14	615	625	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835	845	855	865	875	885
15	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890
16	625	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835	845	855	865	875	885	895
17	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890	900
18	635	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835	845	855	865	875	885	895	905
19	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890	900	910
20	645	655	665	675	685	695	705	715	725	735	745	755	765	775	785	795	805	815	825	835	845	855	865	875	885	895	905	915

TABLE V.—MARKS FOR LEG LENGTH (SYMPHYSIS PUBIS TO TOE). (Measurements in millimetres).

Carcass Weight, lb.	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to 109	110 to 114	115 to 119	120 to 124	125 to 129	130 to 134	135 to 139	140 to 144	145 to 149	150 to 154	155 to 159	160 to 164	165 to 169	170 to 174	175 to 179	180 to 184	185 to 189	190 to 194	195 to 199
Marks																												
		and	over																									
1	450	460	470	480	490	500	510	520	530	540	550	560	570	575	580	585	590	595	600	605	610	615	620	625	630	635	640	645
2	449 to 440	459 to 450	469 to 460	479 to 470	489 to 480	499 to 490	509 to 500	519 to 510	529 to 520	539 to 530	549 to 540	559 to 550	569 to 560	574 to 565	579 to 570	584 to 575	589 to 580	594 to 585	599 to 590	604 to 595	609 to 600	614 to 605	619 to 610	624 to 615	629 to 620	634 to 625	639 to 630	644 to 635
3	439 to 430	449 to 440	459 to 450	469 to 460	479 to 470	489 to 480	499 to 490	509 to 500	519 to 510	529 to 520	539 to 530	549 to 540	559 to 550	564 to 555	569 to 560	574 to 565	579 to 570	584 to 575	589 to 580	594 to 585	599 to 590	604 to 595	609 to 600	614 to 605	619 to 610	624 to 615	629 to 620	634 to 625
4	429 to 420	439 to 430	449 to 440	459 to 450	469 to 460	479 to 470	489 to 480	499 to 490	509 to 500	519 to 510	529 to 520	539 to 530	549 to 540	554 to 545	559 to 550	564 to 555	569 to 560	574 to 565	579 to 570	584 to 575	589 to 580	594 to 585	599 to 590	604 to 595	609 to 600	614 to 605	619 to 610	624 to 615
5	419	429	439	449	459	469	479	489	499	509	519	529	539	544	549	554	559	564	569	574	579	584	589	594	599	604	609	614
		and	under																									

weight of the carcass it gives a measure of the amount of bone in the carcass. The scale for converting measurements to marks is given in Table V.

Pork.[1]

The weights of carcasses most in demand for the London Trade are from 60 to 80 lb., although during the summer months and in some other markets, there is some demand for rather heavier carcasses for cutting purposes. The latter conveniently fall into two main groups—80 to 100 lb., and 100 to 120 lb. Since the main trend of future trade, on analogy with "Canterbury Lamb," will probably lie with the 60 to 80 lb. group, it is on this group that we have concentrated most. Scales have, however, been prepared for the other groups as well.

(The bacon scheme now operating in Great Britain has caused a considerable amount of variation in the demand for these various porker weights quite out of proportion to the normal, as indicated above).

Since there was comparatively little detailed published information available relating to the most suitable types demanded by the consumer, we were compelled to construct for the first time measurement and inspection standards which we believe accurately reflect consumer preferences.

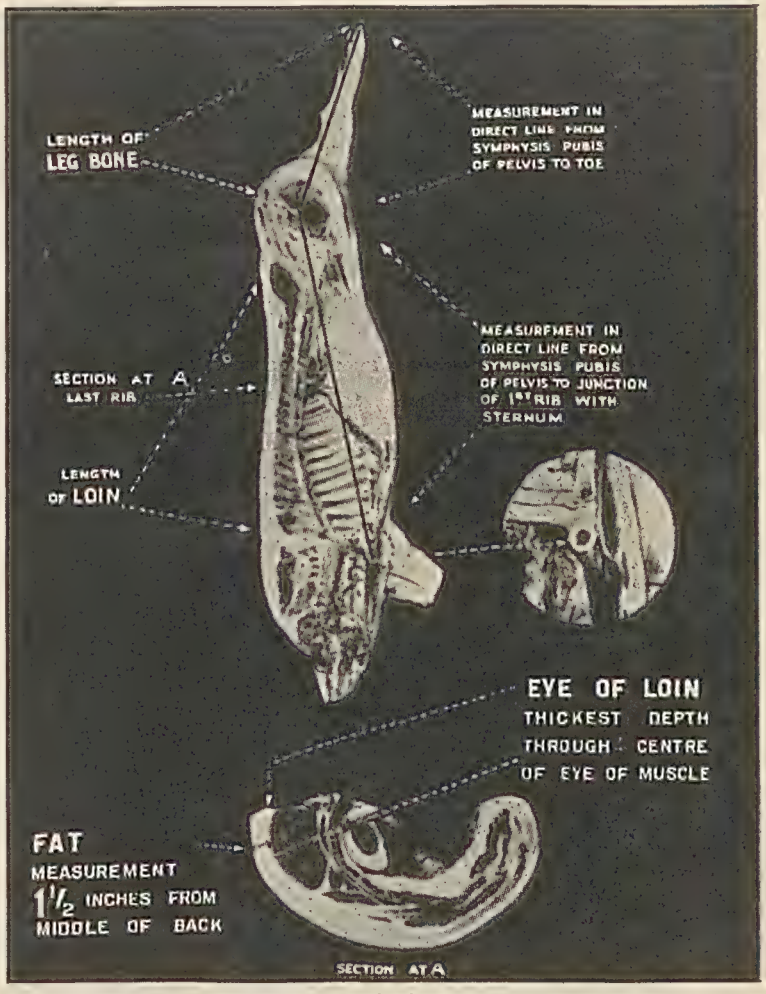
LENGTH OF LEG BONE
MEASUREMENT IN DIRECT LINE FROM SYMPHYSIS PUBIS OF PELVIS TO TOE
MEASUREMENT IN DIRECT LINE FROM SYMPHYSIS PUBIS OF PELVIS TO JUNCTION OF 1ST RIB WITH STERNUM
SECTION AT A LAST RIB
LENGTH OF LOIN
EYE OF LOIN
THICKEST DEPTH THROUGH CENTRE OF EYE OF MUSCLE
FAT
MEASUREMENT
1½ INCHES FROM MIDDLE OF BACK
SECTION AT A

Fig. 4.—Judging by award of marks by measurement.

The scale of marks is the same as for bacon. The standard, however, is in one respect different. In the case of pork, it is important that not only should the belly be thick but that it should contain a higher proportion of lean meat. Comparison with the photographic scale (Figs. 2, 3) is made. As already stated the maximum marks (12) are given for a streak which is *both* thick and full of lean meat. The minimum marks (1) are given *either* for one which is thin, *or* for one which is thick, but which contains a high proportion of fat. Illustrations of intermediate marks (6) in each case are also shown. In the case of the back fat thickness too, one slight alteration has to be recorded. For pork this measurement is taken one inch from the middle line, as compared with one and a half inches on bacon carcasses.

Baconers.

In considering bacon we have taken as our Standard a Class I. carcass for the Wiltshire trade under the British Bacon Scheme just as we have taken the small 60 to 80 lb. London porker as the ideal standard for pork.

The weights of the carcasses suitable for making bacon will vary slightly with the type of pig used. For Wiltshire sides, made from breeds such as the Large White, the optimum carcass weight is 150 lb., but where, as in most of the material we are dealing with, the breed (Berkshire crosses) is of early maturing type, as used for the production of small porkers, a rather lower weight is advisable

on account of the tendency of the pig to remain rather short and put on fat at weights above 150 lb. For districts which are beginning for the first time to produce frozen bacon pig carcasses for this country we have therefore added to our scale of points one for "Suitability of Carcass Weight" (Table VI.). To give the optimum carcass weight of 135 to 154 lb. for this type of pig a live weight of from 180 to 200 lb. is required.

It will be noticed that carcasses falling much under the optimum weights are penalized more than those which are over these weights, for they are less suitable for making into bacon.

Dr. Hammond pointed out that they like bacon of a particular weight in England. They like to have it, as far as possible, standardized, i.e., the same sized rasher, the same degree of fatness, &c., week after week.

Streak (12 *Marks*).—For bacon purposes rather more fat is allowable than for pork, and so a different photographic scale is used (Figs. 2, 3).

Back Fat Thickness (20 *Marks*).—This measurement is taken one and a half inches from the middle line. Since the actual thickness of the fat is much greater in a heavy bacon carcass than in a light pork carcass, the latitude (in millimetres) that can be allowed for a reasonably good carcass is larger. In Table III., which gives the scale for converting measurements to marks, therefore, the drop in marks for each millimetre from the optimum measurement is less than for pork carcasses.

TABLE VI.—BACON PIGS—MARKS FOR SUITABILITY OF CARCASS WEIGHT.

Marks.	Carcass Weight (lb.).
1	110–114
4	115–119
7	120–124
10	125–129
13	130–134
15	135–154
14	155–159
13	160–164
12	165–169
11	170–174
9	175–179
7	180–184
5	185–189
3	190–194
1	195–199

Questions and Answers.

During the demonstration many questions were asked. Replying to these, Dr. Hammond said the reason that points were not allotted for the texture of the flesh and fat was that this scheme of judging had been organized for the judging of frozen pigs in London. Carcass competition pigs come across to London and are dealt with there. When they are frozen the texture of flesh and fat cannot be judged. It is very important to get a hard, firm fat. To judge the firmness of fat, just feel with the thumb along the back fat. The texture of the flesh can be judged by rubbing the thumb over the cut eye muscle (chop muscle). The smoother the texture the more tender will it eat; it is a guide to the age of the pig. The younger the pig the smoother the flesh will be.

Texture can be judged satisfactorily after de-frosting, but the other things cannot be judged very well, because the whole carcass goes flabby. When carcasses are de-frosted, they do not hold up as well as they do when they are fresh. Further, to judge them de-frosted would be more expensive.

A bacon pig showing milk or seedy cut in the mammary gland would be disqualified immediately.

To determine the best method of feeding or breeding pigs to produce ideal pork, tests have been conducted during the past two years, continued Dr. Hammond. It is found that if you take a pig at weaning time, one that is small and unthrifty and does not do well, or which has a bad time due to poor feeding after weaning and goes back in condition, and feed it hard so as to push it up in weight quickly, it will turn out to be over fat and thin in the lean. On the other hand, if you take a pig which grows well up to the time of weaning, which is creep fed and grows well when it is young, and then instead of putting it on to heavy feed and pushing it hard at the end of the feeding period, you let it go on gradually and slowly up to the required weight, you will get the type of pig which is thick in the lean and has very little fat. In early life the pig is growing its frame and its flesh or lean meat. If you get it to grow well in early life, it will grow lean meat. If, on the other hand, you let that little pig drop back after weaning, it will affect the development of the lean meat. If you make a pig grow quickly, late in life you make it fat. You want to get the pig to grow well early in life in order to get lean meat, and then afterwards let it go steadily on until it is finished; not try to push it on at the end of the feeding period. If you let them fend for themselves and make little growth for a month

or so early in life and then bring them in and push them on by heavy feeding you will get fat rather than flesh (or lean meat).

We should never have a store pig, said Dr. Hammond. We get the best result with pigs that have a heavy weaning weight and grow continuously. Similarly with cattle, if you let the calf lose its baby flesh it will never have the thickness of flesh that is to be found in one that is kept growing all the time. There is no harm in a little exercise, providing the animal is thriving all the time. Most people make the mistake of not creep feeding the little pigs, and when they leave their mother they have not the size and vigour to resist any trouble which comes along; they go under and have a bad time, Under these conditions you get that thin-fleshed animal.

It is better to castrate a young pig when it is still suckling, because then it does not receive any check after weaning. The practice of late castration, some pigs being left as long as four months, is to be discouraged. Further, such a practice affects the appearance of the carcass.

It is considered that the firmest and hardest fat is produced when the pigs have been fed on skim milk and barley meal. There is nothing that will make an animal grow so well as skim milk, especially the young pig. Too much maize or any food that contains oil will give a soft fat; one that does not keep well. If skim milk is not available, the best substitute probably is meat meal, which when mixed with cereals balances the carbohydrates in the ration.

Barley should be ground roughly before feeding. It should not be ground fine enough to make it powdery. With regard to wet feeding this is not so important.

Dr. Hammond emphasized that not only the breed, but also the strain and type were essential when considering the ideal export pig. Generally speaking a white pig is best, although the Berkshire usually has a very good thick eye of lean meat. A cross between a Large White and a Berkshire is a white pig, and it carries the thickness of flesh that is desired.

Tubercle Free Herds

The following herds have been declared free of tuberculosis under the scheme conducted by the Department of Agriculture. Under this scheme a tuberculosis-free accredited herd of cattle is one in which the entire herd has passed two negative, successive, annual physical examinations and tuberculin tests, or, upon disclosure of infection, three semi-annual, successive physical examinations and tuberculin tests applied by a State Veterinarian or by a qualified and registered veterinarian who is approved by the Chief Veterinary Inspector for that purpose.

ACCREDITED TUBERCLE FREE HERDS.

Herd Number.	Name.	Address.	Number in Herd.	Herd Number.	Name.	Address.	Number in Herd.
1	State Research Farm	Werribee ..	259	10	Banyule Stud Pty. Ltd.	Heidelberg ..	122
2	Warragul High School	Warragul ..	35				
3	Payne, A. E. T. ..	"Yarra View," Lilydale	80	11	McIntosh, John ..	"Burnwood," Merrigum	31
4	Dennis, Mrs. A. A. ..	Frankston ..	14	12	Black, Mrs. Agnes ..	Mount Noorat	40
5	Lady Talbot Milk Supply Company	Cranbourne ..	418	13	Black, I. S. ..	"The Cottage," Mount Noorat	44
6	Reid, Ralph G. ..	"Holmwood," Koo-wee-rup	99	14	Read, John D. ..	"Springhurst Estate," Springhurst	99
7	Harris, J. W. ..	"Rowena," Clyde	72	15	Kelly, C. ..	"Glenmore," Creighton's Creek, Euroa	22
8	School of Horticulture	Burnley ..	8				
9	Lawrence, P. H. ..	"Rainga," Tarrawarra	59				

London Markets

Weekly Prices

The following information as to prices offering in London for the principal Victorian primary products has been taken from cablegrams received each week by the Department of Agriculture from the Victorian Agent-General in London.

Product.		Price for Week Ending—			
		29th April.	6th May.	13th May.	20th May.
		d.	*d.*	*d.*	*d.*
Lamb, 1st quality, Victorian	29–36 lb.	7⅛	7⅛	7⅛	7⅛
Lamb, 1st quality, Victorian	37–42 lb.	7	7	7	7
Lamb, 1st quality, other States	29–36 lb.	7	7	7	7
Lamb, 1st quality, other States	37–42 lb.	6¾	6¾	6¾	6¾
Lamb, 2nd quality, Victorian	28 lb. and under	7⅜	7⅜	7⅜	7⅜
Lamb, 2nd quality, Victorian	29–36 lb.	7	7	7	7
Lamb, 2nd quality, other States	28 lb. and under	7¼	7¼	7¼	7¼
Lamb, 2nd quality, other States	29–36 lb.	6¾	6¾	6¾	6¾
Lamb, 3rd quality, all States	28 lb. and under	7⅛	7⅛	7⅛	7⅛
Lamb, 3rd quality, all States	29 lb. and over	6½	6½	6⅝	6⅝
Mutton wethers and/or maiden ewes	Under 40 lb.	4¼	4⅛	4⅛	4
Mutton wethers and/or maiden ewes	41–48 lb.	4⅛	4	4	4
Mutton wethers and/or maiden ewes	49–56 lb.	4	4	4	4
Mutton ewes	Under 40 lb.	3⅞	3⅞	3⅞	3¾
Mutton ewes	41–48 lb.	3⅝	3⅝	3⅝	3½
Beef, frozen ox hinds	145–210 lb.	..	..	..	..
Beef, frozen ox crops, weights corresponding	..	..	..	..	..
Beef, chilled ox hinds	145–210 lb.	4⅜	4½	4½	4¾
Beef, chilled ox crops, weights corresponding	..	3⅜	3¼	3⅜	3⅜
Pork, Australian 1st quality	60–80 lb.	7	7	6⅞	6¾
Pork, Australian 1st quality	81–100 lb.	7	7	6⅞	6¾
Pork, New Zealand, 1st quality	60–80 lb.	7	7	6⅞	6¾
Pork, New Zealand, 1st quality	81–100 lb.	7	7	6⅞	6¾
		s.	*s.*	*s.*	*s.*
Bacon, Canadian	per cwt.	97	95	94	91
Bacon, Empire (cured in England)	per cwt.	92	92	92	89
Bacon, Danish	per cwt.	108	104	102	98
Butter, unsalted, choicest grade	per cwt.	127–128	128–129	132	128
Butter, unsalted, 1st grade	per cwt.	126	128	130	126–127
Butter, unsalted, 2nd grade	per cwt.	..	..	..	..
Butter, unsalted, pastry grade	per cwt.	..	..	..	..
Butter, salted, choicest grade	per cwt.	127–128	127–128	129–132	126–127
Butter, salted, 1st grade	per cwt.	126–127	126–127	130	125–126
Butter, salted, 2nd grade	per cwt.	124–125	125–126	129	124
Butter, salted, pastry grade	per cwt.	121–122	122	126–127	122
Butter, Danish	per cwt.	126	127	130	128
Market (butter)		Has continued firm	Firm	Firm and advancing throughout week	Slow and declining market throughout week

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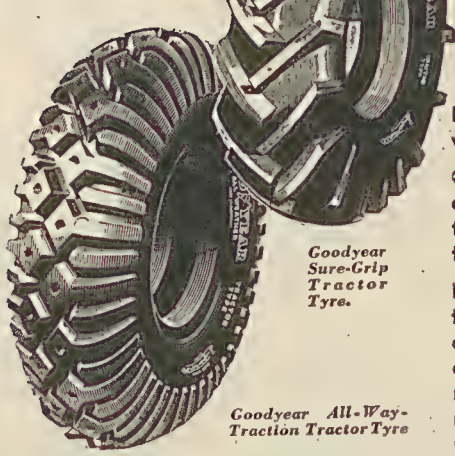

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Rochester Irrigated Pasture Competition 1937-38

Report of the Judge—E. T. Beruldsen B.Sc. (Agric.), Senior Irrigation Officer

FOR many years the Rochester district has been noted for its irrigated pastures. Previously, notable examples of highly productive pastures would be indicated to visitors but unfortunately the general standard was not high. With the more general adoption of liberal top-dressing with superphosphate considerable progress has been made until, at the present time, excellent pastures are to be seen throughout the district. It is not uncommon to find farmers who are applying super. at the rate of two or even three bags per acre in one season. Together with the gradual spreading of the "irrigation wild white" clover this has been responsible for a remarkable increase in the productive capacity of the district as a whole. For example, the Rochester Co-operative Butter Factory produced over 600 tons of butter last year.

About 80 farmers attended a pasture field day at Nanneella on 30th March, and on the four farms visited there was ample evidence of the remarkable improvement in production as a direct result of liberal top-dressing. In six years Mr. Floyd raised a formerly neglected block to the status of a "cow to the acre" farm. The self-sown and sown-down pastures on Mr. Christie's farm left little to be desired. Mr. Beecroft was milking twenty cows and carrying the young stock on a block of 18 acres, supplementary fodder to the value of £25 only being purchased each year. On this farm well over 300 lb. of butter-fat per acre per annum was being produced. The transformation which can occur in a relatively short period when regular watering and liberal top-dressing are resorted to was very well demonstrated on the farm now owned by Mr. Baker. This transformation had been effected within one year, and an excellent development of wild white and strawberry clovers competing with couch grass and *Paspalum dilatatum* was seen.

Despite these and other outstanding successes in pasture development there are still many irrigation farmers in the district who apparently have not profited by the lessons. By some, the development of self-sown pastures and the advent of wild white clover are regarded as altogether fortuitous, having arrived more by the good luck than the good management of the farmers concerned. Such an opinion is unreasonable, since in every case where these highly productive pastures have developed it is found that liberal top-dressing with super. and regular watering has been the policy of these farmers for several years. Generally, the more highly productive pastures have succeeded lucerne, which had been treated well in the past until the stand thinned out. Meanwhile, instead of weedy summer grasses and weeds such as rushes, docks and chicory invading the thinned out stand, good perennial clovers, *Paspalum dilatatum* and even perennial rye-grass have established themselves. The effect of the preceding lucerne crop has been to raise the level of fertility and to improve the penetration of the irrigation water through the subsoiling action of the roots. There are other cases, however, where white clover and paspalum have invaded neglected lucerne stands, and with a radical change in policy with regard to watering and top-dressing have been the means of establishment of first-class pastures.

A high producing member of Mr. E. Watson's herd.

During the visit of the judge, one farmer referred to *Paspalum dilatatum* as "lazy farmer's friend,"

To some extent this description was apt, but without the association of a legume and without controlled grazing, paspalum loses a considerable amount of its value. The development of the legume and proper control of the grazing imply good farming methods.

Sometimes more credit is attributed to the type of plants sown than to the treatment accorded to hese plants subsequent to establishment. For example, lucerne was regarded with some justification as the "king of fodder plants," but to those who disregarded the first principles of good cultural practices it must have been a severe disappointment when the lucerne stand thinned out after a year or two. At present "irrigation white clover" has become famous, and at a recent sale in the Goulburn Valley up to 17s. 6d. per lb. was bid for seed of this wonder plant. There is not the slightest doubt that many of those who offered such high prices to secure this seed had the plant already established on their farms, but were unaware of the fact since they had failed to produce the conditions which favour its development.

If any fault could be found with the many highly productive self-sown pastures it lay in the fact that they consisted of perennial species which had their peak of production in the summer. Accordingly, the production from these pastures during the winter months was relatively low. In some instances it was gratifying to note that species such as perennial rye-grass and prairie grass were gradually intruding. These species will raise the production during the winter months and it might be advisable to hasten their establishment by sowing such seed while top-dressing during the autumn. A hard grazing off and a thorough harrowing should precede the seeding operations.

Recently there has been an improvement in the conditions under which irrigation water is supplied in the Rochester district. The schedule of four days "on" out of twelve must facilitate the regular watering of the pastures during hot weather. This frequency of supply has been made necessary through the relative impermeability of a large proportion of the soils in the district. Where better penetration is effected there is not the same necessity for such frequent watering, and a better economy in the use of water exists.

One would like to see an extension of the practice of supplementary watering. Where the land is properly graded this method of applying a subsidiary watering one or two days after the initial application while the ground is still moist on the surface must benefit the pastures. At Werribee the pasture plots which are "watered as required" in one year received seventeen waterings for a total of 25 inches and gave no more production than pasture plots which were watered nine times at intervals of three weeks between each watering for a total of 22 inches. In the latter case, at each period a supplementary application was applied on the day following the initial one. With numerous light applications of water there is a tremendous loss of moisture through evaporation, and this loss is even more pronounced when the pastures have been over-grazed just prior to irrigation. Watering of the pasture while a good "cover" remains will reduce evaporation losses.

In pastures which had been grazed very hard it was noticed that the white clover had been badly "scalded" in patches during irrigation. When left on a paddock too long, the stock tended to punish the more palatable constituent, viz., the clover, and invariably the scalded patches were found where the clover had been grazed very short.

Too frequent and too severe grazing of the pastures are common faults, but not only in the irrigation areas. In the dry districts the evil consequences of over-grazing are to be seen in the severe soil erosion which occurs and in the loss of the more valuable pasture species. In the case of irrigated pastures these evil consequences are perhaps not quite so apparent, but they are not the less real. When it is considered that the leaves of the plant constitute the mechanism by which the plant elaborates the food materials necessary for its existence, it will be readily understood that continual restriction of the leaf area, such as occurs under bad grazing methods, will at least stunt the development and may cause the death of the plant. In irrigated pastures the loss of the valuable pasture species permits the intrusion of inferior fodder plants and of weeds.

Up to a point the less frequently a pasture is grazed the greater yield of herbage will be produced. Beyond a certain point the loss in quality is not compensated for by the increase in yield. It has been established that pastures require a spell of three to four weeks between grazings in order to produce a high yield of fodder, balanced in respect of both its botanical and chemical composition.

Most irrigation farms are stocked up to the limit of their capacity. At certain periods of the year the pasturage offering is limited. It is during these periods that the temptation arises to over-graze, but if adequate supplies of fodder have

been conserved during the flush period of growth the farmer should not hesitate to anticipate the lean period and commence to supplement the grazing considerably earlier than is the general rule. If such a policy is adopted it will be found that the pastures are not unduly punished and that they will make a more rapid recovery when the period of restricted growth is over.

Meadow hay is an excellent supplementary ration and usually it is found that it is relished by the stock even more than lucerne hay. With the general change from lucerne to pasture many farmers are finding difficulty in handling the meadow hay. Methods which were adequate in the conservation of lucerne hay fail somewhat when used for the conservation of pasture hay. The use of "sweeps" and other implements specially designed for the harvesting and stacking of this type of hay will facilitate its handling. A sweep which should not be difficult to construct was seen in operation on Mr. D. Holman's farm. The hay can be gathered from the wind-row into big heaps from which it can be easily forked on to the waggon.

Mr. D. Holman working with his hay sweep.

The Awards.

In this year's competition there was a slight increase in the number of entries. Mr. H. A. Schier again won with the same paddock which he exhibited last year. At both inspections the pasture was in excellent condition and reflected the care and attention which Mr. Schier accords his pastures. Originally this area of 7 acres was sown with 8 lb. Hawke's Bay perennial rye-grass, 3 lb. Italian rye-grass, 3 lb. cocksfoot, and 1 lb. each of New Zealand wild white clover, white Dutch clover, alsike clover, and lucerne. At seeding, one bag of super. per acre was used, the following season two bags, and during the present season the dressing had been increased to three bags. The grass-clover balance was excellent. The dominant grass species was rye-grass, but cocksfoot was developing very well. The whole pasture was very uniform, and there were relatively few weeds. If the channels had been growing less nut grass and rushes the exhibit would have scored even better. With the very frequent watering the channels are fairly full of water all through the summer and this problem of keeping the channels free from weeds affected practically every exhibitor.

Some of Mr. S. E. Paynter's pedigree Dairy Shorthorns grazing on irrigated pasture.

Wonderful grazing returns were obtained from Mr. Schier's pasture. Since the first inspection in the middle of November the pasture had been grazed for approximately one week out of four by 60 to 70 milking cows. In addition, sheep had been used to follow up the cows and there had been five grazing periods, with 150 for three days on two occasions, 300 for three days on two occasions, and 240 for five days. This is indeed a remarkable tribute to the potential carrying capacity of irrigated pastures. The sheep grazing had contributed to the uniformity of growth which the pasture exhibited. If the sheep are not left on the pasture too long they form a very valuable adjunct to dairy farming.

Mr. E. Watson gained second place with his No. 1 entry. This was a first class pasture sown some years ago with the usual mixture, including 6 lb. of lucerne per acre. Mr. Watson's idea is to have a lucerne paddock for a number of years, followed by pasture when the lucerne thins out. Under these conditions the lucerne does not last very long. White clover is too severe a competitor. Lucerne deserves to be sown by itself and to be cut and not grazed. Under these conditions it will persist as a profitable stand for a good number of years. Eventually, when the lucerne thins out, it is possible to introduce the pasture species without reploughing, provided

that the grading of the land is good enough. Certainly, under this system, Mr. Watson has been successful in establishing some of the best pastures in the Nanneella district, but the cost of establishment has been well above the average. The pastures on this farm are top-dressed very liberally and consistently. One bag per acre is applied three times each year. The super. is applied with the drill, and a double purpose is served in that the hoes of the drill have the effect of harrowing the pasture and breaking up the droppings. The pasture had a very good mixture of pasture species and was in good fresh green condition at each inspection. A few docks and some nut grass, particularly in the few low patches, were all that marred the exhibit. This pasture of three acres supports 28 milking cows for one week out of five as an average throughout the year.

The pasture exhibited by Mr. D. Holman, which gained third place is of the self-sown type. The 9-acre paddock was sown with lucerne six years ago. *Paspalum dilatatum* and wild white clover usurped the place of the lucerne in a few years and these species are the basis of this pasture. However, it was interesting to note that perennial rye-grass, cocksfoot and even prairie grass were establishing themselves. For years Mr. Holman has been top-dressing consistently. Each year an autumn dressing of two bags of super. per acre is applied to his pastures. On this farm of 53 acres, 45 cows are being milked, and altogether 70 head of stock are carried. In addition meadow hay is conserved for winter feeding. At the time of the spring inspection meadow hay was being conserved, the hay sweep being of great assistance to Mr. Holman in transporting the hay from the wind-row to the stack.

The Nanneella Estate school pasture plots.

School Plots.

The school plots were up to their usual high standard and, in the case of Nanneella Estate, considerable extension had been effected. Here the effect of plant competition was being studied. A study of this nature was suggested in Mr. A. Morgan's report on the competition of last year. The teachers at all these schools are to be complimented on sustaining the interest of the pupils in a project which is of considerable value. To

ROCHESTER IRRIGATED PASTURE COMPETITION, 1937-38.—DETAILS OF THE AWARD (TWO INSPECTIONS).

Exhibitor.	Lay-out and Condition of Channels.	Condition of Pasture.	Uniformity.	Mixture.	Freedom from Weeds.	Total.	Grand Total.
	(20)	(20)	(20)	(20)	(20)	(100)	(200)
1. H. A. Schier	18	19	17	19	19	92	184
	17	20	18	19	18	92	
2. E. Watson, No. 1	18	18	17	20	16	89	180
	18	19	17	20	17	91	
3. D. Holman	19	16	18	18	17	88	179
	18	19	18	18	18	91	
4. H. G. Foster	19	18	17	18	16	88	178
	18	20	18	18	16	90	
5. E. Watson, No. 2	19	18	17	16	19	89	177
	19	18	16	16	19	88	
6. Firth Bros.	18	16	17	19	17	87	176
	18	18	17	19	17	89	
S. E. Paynter, No. 2 ..	18	18	18	18	18	90	176
	18	16	18	17	17	86	
7. S. E. Paynter, No. 1 ..	17	17	18	18	18	88	172
	17	15	18	17	17	84	

NOTE—The results of the spring inspection are given first in each case.

[Continued on page 307.

Australian Stand, British Industries Fair, Earl's Court, London, 21st February to 4th March, 1938. During this period 25,748 samples were sold to 9,540 people, and 49 British and 22 foreign trade enquiries were received.

Australian Publicity Abroad

The Minister of Agriculture, Mr. E. J. Hogan, has received from the Acting Agent-General for Victoria a report by Mr. A. E. Hyland, Director of Australian Trade Publicity in London, on the Australian stand at the British Industries Fair, Earl's Court, London.

In the ten days during which this Fair was held, 9,540 people visited the Australian stand and 25,748 sample packages of Australian produce were sold over the counter, while some 30,000 leaflets and recipe books were distributed.

The officers in charge of the stand report having received 49 British trade enquiries and 22 foreign trade enquiries in connexion with Australian products.

All Australian Baconer and Porker Competitions

Report of the Judges, Messrs. H. R. Davidson and Jos. B. Swain.

Baconers.

JUDGING of the baconer carcass competition has been carried out in accordance with the standards laid down to comply with the requirements of the bacon market in the United Kingdom. These standards include 100 marks for Breeders' Points, 10 marks for Marketing Points relating mostly to defects which may occur in the industrialization, dressing or transport of the carcass, and 15 marks for Suitability of Carcass Weight. The marks for individual entries and the average percentage for groups compare with this total of 125 marks, and in making any comparison of breeds or strains, care should be taken to isolate the marks for Breeders' Points only.

The individual results, with marks for each point, are given in detail, along with photographs of specimen carcasses whole and cut through the loin. In addition the results have been analysed to show the percentage of possible marks for each point and for the total gained by each entry. These percentage results have further been analysed according to States and according to breed. The table giving final results and placings also includes the principal feeds, as stated by the entrants, though this, of course, has not been taken into consideration in judging. Entry No. 6 from the Inspector-General of Hospitals comes first, with Entry No. 2 from W. Logie a good second, after which there is a very consistent and small drop in marks all through the remaining entries.

The Kingston Farm Pig Co. were very unlucky with Entry No. 1, as the Shipping Company lost the carcass weighing 134 lb., leaving only two in the pen. These, however, we felt justified in including in the report, although they were of necessity disqualified from competing.

We desire to point out that owing to inclement weather (it poured heavily with rain all the time) it was necessary to photograph the carcasses by flashlight instead of by daylight, as is our usual practice. As a result, the appearance of the carcass photographs cannot necessarily be taken to be correct as regards colour, shadows and marks generally.

A very interesting feature of this competition, in which the average marks for all entries amounted to 66·7 per cent., is that the carcasses are generally better than the commercial product, which we have not always found to be the case. This indicates the great interest, care and attention given by entrants, and is evidence of their desire to give of their best.

The importance of having three carcasses in each entry is corroborated by several entries. Not only does this give a better average for marking purposes, but reduces the inevitable risk when pigs, which are to be judged on carcass points only, must be selected alive. In this connexion we would draw attention to Entry No. 5, from the Inspector-General of Hospitals where the carcass weighing 160 lb. is undoubtedly the leanest looking carcass of the three, when judged on external conformation, but proves to be the fattest when cut through the loin. We have come across this relationship on several other occasions, and it proves not only the importance of carcass tests, but also the necessity of having a fair sample to judge.

While the results have been analysed on a breed basis, we feel that too much attention should not be placed on this until a large number of results has been obtained. A standard product is what is required by Smithfield, and as there are of necessity, considerable variations in management and environment, it may be necessary to use slightly different breed types to arrive at the standard carcass.

Our comments on the different points which have been judged are as follows :—

Skin and Colour (5 *Marks*).—It is necessary for successful marketing that the carcass should retain its natural bloom and be free of bruise marks, scratches, bites, &c. Even though there may be some doubt as to the cause of these faults, by the time they arrive at Smithfield, it is important to draw attention to them. In this direction both the Nankivell and Hawtin entries were reddish in colour and lost one mark each, while the Kingston Farm Pig Co.'s exhibits lost marks for a dull

blotchy appearance. The Dawkins' entry was bruise marked, while the Crosby entry was slightly marked by wrinkles on the skin. The Western Australian entry received one mark only out of five, as these pigs were extremely dirty in the skin.

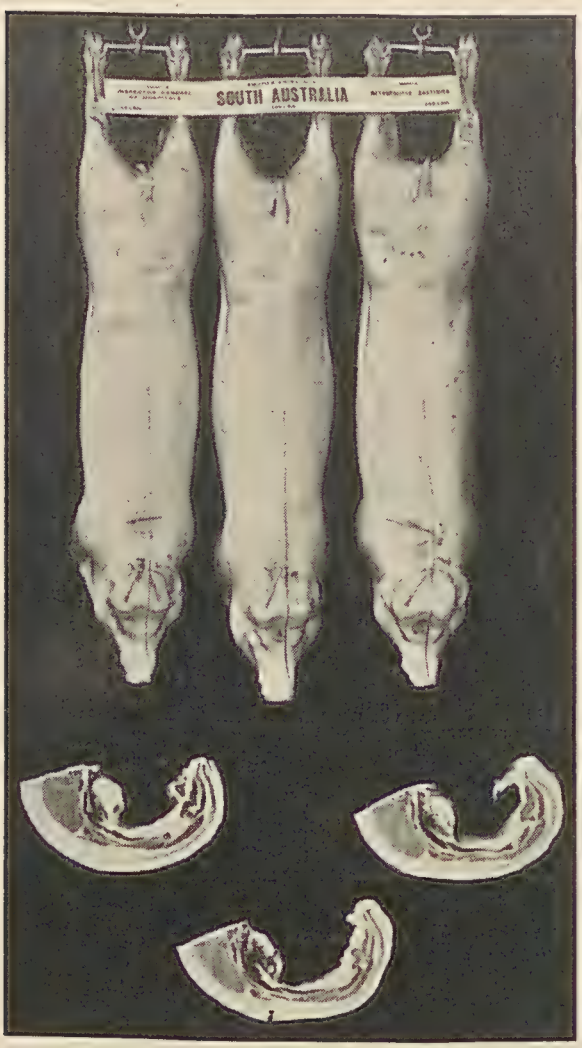
Dressing (5 *Marks*).—All entries scored 100 per cent. of marks, so that this point calls for no comment.

Hams (8 *Marks*).—The average marks for all entries are 72·3 per cent. of the possible total and indicate that the hams are very good. The variation in the breed analysis is from 62·5 to 87·5 per cent. and follows breed characteristics fairly closely.

Shoulders (7 *Marks*).—With 68 per cent. this point is not quite so good as hams, though if the Burgess entry with only 47·6 per cent. is omitted,

All Australian Baconer Carcass Competition.—Analysis of Results for Individuals on a Percentage Basis.

——	Individual Competitors Results.	Principal Feeds, &c.	Breeds.	Marks Awarded.	Per-centage.
					%
South Australia	Inspector-General of Hospitals (Entry No. 6)	Crushed barley, crushed wheat, crushed peas, skim milk	Large White.. ..	280	74·6
Victoria ..	W. Logie (Entry No. 2)	Barley and boiled potatoes	Large White x Large White x Middle White	269	71·7
Queensland ..	Kingston Farm Pig Co. (Entry No. 2)	Buttermilk, maize, pollard, oatmeal. Paddock reared, finished last six weeks in pens	Large White ..	261	69·6
South Australia	J. W. Aldridge (Entry No. 2)	Peas, barley and meat meal	Large White ..	258	68·8
South Australia	Inspector-General of Hospitals (Entry No. 5)	Crushed barley, crushed wheat, crushed peas, skim milk	Large White x Berkshire	257	68·5
South Australia	W. H. E. Crosby (Entry No. 3)	Mixed corn, skim milk, pollard. Free range	Large White x Tamworth x Berkshire	250	66·6
Victoria ..	H. C. Nankivell (Entry No. 1)	Pastured skim milk, boiled potatoes, finished with barley, peas, and skim milk	Large White ..	249	66·4
Victoria ..	F. Hawtin (Entry No. 1)	Milk, pollard, crushed barley, yard feed	Large White ..	246	65·6
South Australia	J. W. Aldridge (Entry No. 4)	Peas, barley and meat meal	Large White x Berkshire	246	65·6
Victoria ..	Nestle Anglo-Swiss Milk Co. (Entry No. 1)	Buttermilk, whey and crushed barley. Indoors from time of birth	Tamworth x Berkshire	240	64·0
South Australia	J. H. Dawkins (Entry No. 1)	Crushed barley and meat meal	Large White x Middle White x Large White	225	60·0
Western Australia	W. G. Burgess (Entry No. 1)	Wheat	Canadian Berkshire ..	218	58·1
Queensland ..	Kingston Farm Pig Co. (Entry No. 1) (Not in competition, two carcasses only)	Buttermilk, maize, pollard, oatmeal. Paddock reared, finished last six weeks in pens	Large White ..	172	68·8



BACONER

BREED Large White — Inspector General of Hospitals — Entry No. 6

A. Inspection	Maximum Marks	Actual	Marks	Ideal	Actual	Marks	Ideal	Actual	Marks	Ideal	Percentage
Skin	5		5			5			5		100%
Colour	5		5			5			5		100%
Dressing	8		5			4			6		62.5%
Hams	7		4			5			4		61.9%
Shoulders	12		7			7			7		58.3%
Streak											
B. By Measurement											
Eye Muscle	28	46	20	54	44	19	53	47	21	54	71.4%
Fat Thickness	20	22	18	20	16	17	19	17	17	20	86.6%
Body Length	20	745	8	805	770	15	795	780	13	815	60%
Leg Length	5	580	2	559	585	1	554	560	5	564	53.3%
Wgt. Suitability	15		15			15			15		100%
Total			89			93			98		
Total (3 Carcases)						280					74.6%

AUSTRALIAN MEAT BOARD PIG COMPETITION DEC. 1937
Judges: H. R. DAVIDSON and JOS. B. SWAIN

First prize baconer carcasses entered by the Inspector General of Hospitals, South Australia. These carcasses are shown whole and cut through the loin. The analysis of points is shown in the above table.

the other entries are very good. It is to be expected that where hams are good, shoulders will not be quite so good, and vice versa. In illustration of this it will be seen that the Large Whites have the lowest marks for hams and highest for shoulders. The Canadian Berkshires, with the highest marks for hams, have the lowest for shoulders.

Streaks (12 *Marks*).—Although this point scores 60 per cent. only of possible marks, the streaks must be regarded as very good and potentially better than is shown by the marking. They mostly lose marks because they are not thick enough rather than because there is not sufficient lean in them. Had there been a little more fat between the muscles many of the streaks would have earned full marks.

"*Eye Muscle*" *of Loin* (28 *Marks*).—The standard set for this point is a severe one as it is most important to encourage its development. An average of 59·3 per cent. of possible marks is accordingly considered to be a good result. Some of the entries such as those from Aldridge with 75 per cent., Inspector General of Hospitals with 71·4 per cent., and Logie with 69 per cent., deserve special mention. In some cases where the marks for the whole entry are not so good it will be found that one poor carcass out of the three is responsible, the others being good.

Back Fat Thickness (20 *Marks*).—The results under this heading are very good, and are even better than suggested by the average of 66·1 per cent. of possible marks. Although entries Nos. 1 and 2 from the Kingston Farm Pig Co. averaged 48 per cent. only of marks, this was not due to too much fat, but to too little. A little more finish would probably have enabled these entries to equal No. 6 from the Inspector-General of Hospitals (which scored 86·6 per cent.) or No. 2 from Logie, which at 96·6 per cent. is the best score we have ever recorded under this system from any pen of three pigs.

Body Length (20 *Marks*).—It is in respect of this point, on which the average marks of all entries reach 45·6 per cent. only of the possible, that the entries as a whole are deficient. There is, however, great variation, the difference between the best and the worst being 59·7 per cent. Even within one breed, the Large Whites, there is a variation of from 48·3 to 75 per cent., which brings into prominence the two entries from the Kingston Farm Pig Co., with 71·6 per cent. and 75 per cent. respectively. At the other end of the scale the Canadian Berkshires at 13·3 per cent. do not do themselves or the breed justice.

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Victorian, Clunes, Perennial Rye-grass, 16/- bushel; 15/9 bushel in sack lots (5 bushels).

Victorian, Colac, Perennial Rye-grass, 16/- bushel; 15/9 bushel in sack lots (5 bushels).

Dwalganup Subterranean Clover (early strain), 1/6 lb.; 1/5 lb. in cwt. lots.

Tallarook Subterranean Clover (late strain), mother seed, 3/3 lb.; permanent pasture seed, 2/9 lb.

New Zealand White Clover, 2/6 lb.

L.S. RELIABLE VARIETIES

Cocksfoot, Victorian, Mirboo North, old pasture, 1/5 lb.

Sub-clover, Mt. Barker (Midseason strain), 1/6 lb.; 1/3½ lb. in cwt. lots.

Alsyke Clover, 1/7 lb.

Cow Grass, New Zealand Giant Colonial, 1/5 lb.; 150/- cwt.

White Dutch Clover, 1/7 lb.; N.Z. Wild White Clover, 2/- lb.

"Pilca-butta," Hunter River Lucerne, broad leaf, 1/9 lb.; 1/8 lb. in cwt. lots.

Hunter River Lucerne (contract grown), broad leaf, 1/8 lb.; 1/7 lb. in cwt. lots.

Hunter River Lucerne (broad leaf), good quality, 1/7 lb.; 1/6 lb. in cwt. lots.

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Leg Length (5 *Marks*).—At 72·6 per cent. of the possible this point is very good indeed, particularly considering the preponderance of Large Whites influence.

Suitability of Carcass Weight (15 *Marks*).—Loss of marks in this section is entirely under the control of exhibitors, as the optimum marks for the most suitable bacon market weights, viz., 135 to 154 lb. have been published on several occasions and should be well known.

Porkers.

The judging has been done in accordance with the standards laid down and includes marks for *Skin*, *Colour*, and *Dressing*, to conform to the requirements of marketing in the United Kingdom. If it is required to obtain only the Breeders' marks, which total 100, these will be easily arrived at by deducting the marks for Skin, Colour, and Dressing.

ALL AUSTRALIAN BACONER CARCASS COMPETITION.—ANALYSIS OF RESULTS FOR STATES ON A PERCENTAGE BASIS.

—	Maximum Marks.	Victoria.	Queensland.	South Australia.	Western Australia.	Total.
		Average Marks Percentage.	Average Marks Percentage.	Average Marks Percentage.	Average Marks Percentage.	Average Marks Percentage All States.
A. By Inspection—		%	%	%	%	%
Skin and Colour	5	90·0	84·0	93·3	20·0	85·2
Dressing	5	100·0	100·0	100·0	100·0	100·0
Hams	8	70·8	70·0	72·2	81·6	72·3
Shoulders	7	67·8	80·0	63·2	47·6	68·0
Streaks	12	68·0	66·6	52·7	61·1	60·0
B. By Measurement in M.M.'s—						
Eye Muscle of Loin ..	28	58·3	64·2	60·1	51·1	59·3
Back-fat thickness ..	20	75·0	48·0	65·2	66·6	66·1
Body Length	20	38·7	73·0	49·4	13·3	45·6
Leg Length	5	65·0	52·0	78·8	100·0	72·6
Suitability of Carcass Weight	15	88·3	89·3	94·4	93·3	91·9
Total	125	66·6	69·2	67·3	58·1	66·7

ALL AUSTRALIAN BACONER CARCASS COMPETITION.—ANALYSIS OF BREEDS—AVERAGE FOR ALL STATES.

—	Maximum Marks.	Large White.	Large White x Berkshire.	Large White x Tamworth x Berkshire.	Large White x Middle White x Large White.	Large White x Large White x Middle White.	Tamworth x Berkshire.	Canadian x Berkshire.
A. By Inspection—		%	%	%	%	%	%	%
Hams	8	66·1	68·7	87·5	75·0	79·1	79·1	81·6
Shoulders ..	7	72·2	69·0	66·6	66·6	71·4	61·9	47·6
Streaks	12	66·6	51·8	50·0	38·8	58·3	72·2	61·1
B. By Measurement in M.M.'s—								
Eye Muscle of Loin	28	60·9	61·9	51·1	60·7	69·0	51·7	51·1
Back-fat Thickness	20	63·5	63·3	65·0	56·6	96·6	66·6	66·6
Body Length ..	20	62·0	50·8	46·6	20·0	20·0	26·6	13·3
Leg Length ..	5	56·4	83·3	100·0	80·0	80·0	73·3	100·0
Total	100	63·2	60·8	59·3	51·6	65·0	56·0	52·6

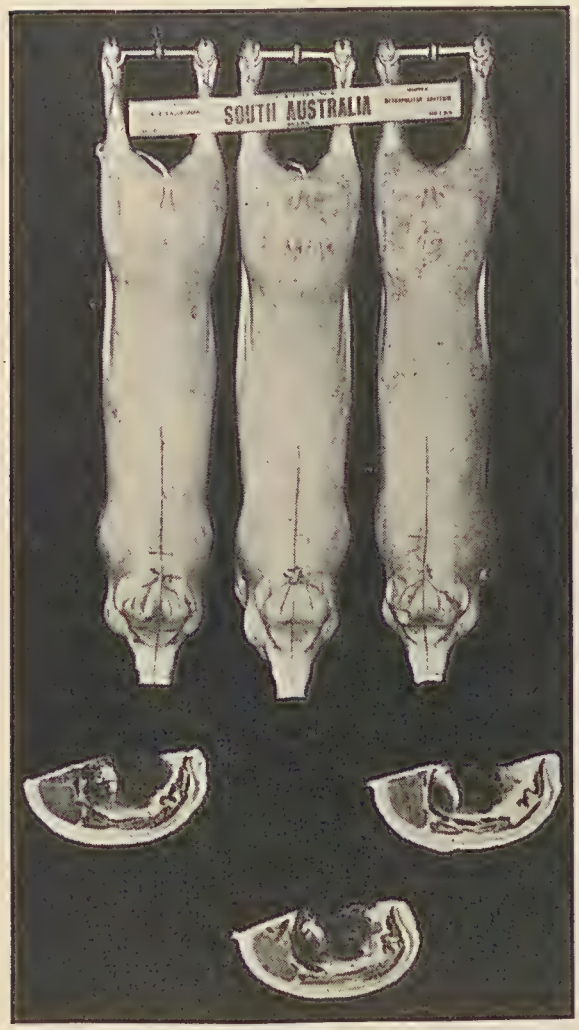
All Australian Baconer Carcass Competition.—Victorian Exhibitors.

Percentage —Average three carcasses.

—	Maximum Marks.	H. C. Nankivell (Large White).	Nestle Anglo-Swiss Milk Co. (Entry No. 2.) (Tamworth Berkshire).	F. Hawtin (Entry No. 1). (Large White).	W. Logie (Entry No. 2). (Large White x Large White x Middle White).
A. By Inspection—		%	%	%	%
Skin and Colour ..	5	80·0	100·0	80·0	100·0
Dressing	5	100·0	100·0	100·0	100·0
Hams	8	62·5	79·1	62·5	79·1
Shoulders	7	71·4	61·9	66·6	71·4
Streaks	12	75·0	72·2	66·6	58·3
B. By Measurement in M.M.'s— (25 M.M.'s = 1 inch).					
Eye Muscle of Loin ..	28	51·1	51·7	61·9	69·0
Back-fat Thickness ..	20	76·6	66·6	60·0	96·6
Body Length ..	20	48·3	26·6	60·0	20·0
Leg Length	5	26·6	73·3	80·0	80·0
Suitability of Carcass Weight	15	95·5	93·3	66·6	97·7
Total	125	66·4	64·0	65·6	71·7

All Australian Porker Carcass Competition.—Analysis of Results of Individual Competitors.

Competitors Results.	Principal Feeds and Husbandry.	Breeds.	Marks Awarded.	Percentage.
South Australia— A. Callaghan (Entry No. 3) ..	Mixture of barley, wheat and Peas. Mainly outside feeding	Canadian Berkshire x Large White	255	73·9
South Australia— Inspector-General of Hospitals (Entry No. 4)	Crushed barley, crushed wheat, crushed peas, skim milk	Large White x Berkshire..	244	70·7
New South Wales— Australian Chilling and Freezing Co. (Entry No. 1)	Wheat, buttermilk, limewater, offal, and green feed	Large White x Tamworth	227	65·7
South Australia— E. A. Farr (Entry No. 5) ..	Skim milk and crushed barley	Large White x Large White x Berkshire	225	65·2
Victoria— W. Logie (Entry No. 1) ..	Barley and boiled potatoes ..	Large White x Large White x Middle White	210	60·8
Queensland—				
Wallace and Son (Entry No. 1) (One pig only, 80 lb.)	Kitchen refuse, with meat meal and maize meal	Tamworth x Middle White	81	70·4
Wallace and Son (Entry No. 2) (One pig only, 72 lb.)	Kitchen refuse, with meat meal and maize meal	Middle White x Tamworth	79	68·6
G. W. Winch (Entry No. 3) (Two pigs, 64 and 66 lb.)	Table scraps, Red Comb pig meal, Borthwick's mebo, no milk, housing intensive system.	Middle White x Berkshire	137	59·5
G. W. Winch (Entry No. 4) (Two pigs, 79 and 85 lb.)	Table scraps, Red Comb pig meal, no milk	Middle White x Tamworth	160	69·5



PORKER

BREED Can. Berk. X Large White — A. H. CALLAGHAN — Entry No. 3

	Maximum Marks	Actual	Marks	Ideal	Actual	Marks	Ideal	Actual	Marks	Ideal	Percentage
A. Inspection											
Skin	5		4			4			4		80%
Colour	5		4			4			4		80%
Dressing	5		5			5			5		100%
Hams	8		6			5			5		66.6%
Shoulders	7		5			5			5		71.4%
Streak	12		9			9			6		66.6%
B. By Measurement											
Eye Muscle	28	42	20	50	42	21	50	43	21	50	73.8%
Fat Thickness	20	14	18	12	13	19	11	15	16	12	88.3%
Body Length	20	655	10	705	662	13	695	660	11	705	56.6%
Leg Length	5	485	4	479	485	3	469	475	5	479	80%
Total			85			88			82		
Total (3 Carcases)						255					73.9%

AUSTRALIAN MEAT BOARD PIG COMPETITION DEC. 1937
Judges: H. R. DAVIDSON and JOS. B. SWAIN

First prize porker carcasses, whole and cut through the loin, entered by Mr. A. H. Callaghan, South Australia. The above table shows the analysis of points obtained by this winning entry.

Skin and Colour.—The results of 89·5 per cent. and 87·6 per cent. respectively are very good, and losses are accounted for by slight bruises, scratches, bites and a few carcasses coming up a bad colour.

Dressing shows an award of 97·1 per cent., all States getting 100 per cent., except New South Wales, one mark being deducted on each carcass because the hands (forefeet) were incorrectly tied up, which tends to throw the shoulders out of shape and possibly helped to cause the low marks on shoulders.

Hams, with a result of 69·4 per cent. is quite up to standard and would have been better but for the poor result of Victoria with only 50 per cent.

Shoulders show a considerable variation in the States, the average of 63·2 per cent. being quite good, New South Wales, however, with 38 per cent., making a poor showing.

Streaks, with an average of 59·1 per cent. is possibly better than it appears, many marks being lost by thinness. Not sufficient fat between the meat.

Eye Muscle of Loin.—The result of 65·9 per cent. is good, although there is very wide difference in many of the carcasses. Special mention must be made of A. H. Callaghan's Entry No. 3, with such level results of 20, 21, 21 mm., with 73·8 per cent. award.

Back Fat with 74 per cent., is very good and indicates that the Australian farmer realizes that the British public want lean meat.

ALL AUSTRALIAN PORKER CARCASS COMPETITION.—VICTORIAN EXHIBITOR.

W. Logie (Entry No. 1) Large White x Large White x Middle White.

(Average three carcasses.)

	Weight. Maximum Marks.	Percentage.
		%
A. By Inspection—		
Skin	5	100·0
Colour	5	86·6
Dressing	5	100·0
Hams	8	50·0
Shoulders	7	80·9
Streaks	12	52·7
B. By Measurements in M.M.'s (25 M.M.'s = 1 inch)—		
Eye Muscle of Loin	28	58·3
Back-fat Thickness	20	56·6
Body Length	20	50·0
Leg Length	5	40·0
Total	115	60·8

ALL AUSTRALIAN PORKER CARCASS COMPETITION.—REPORT AND ANALYSIS OF RESULTS OF STATES.

—	Maximum Marks.	New South Wales.	Victoria.	Queensland.	South Australia.	Average for All States.
A. By Inspection—		%	%	%	%	%
Skin	5	93·3	100·0	86·6	86·6	89·5
Colour	5	100·0	86·6	86·6	84·4	87·6
Dressing	5	80·0	100·0	100·0	100·0	97·1
Hams	8	62·5	50·0	77·0	69·4	67·8
Shoulders	7	38·0	80·9	61·9	66·6	63·2
Streaks	12	61·1	52·7	61·1	59·2	59·1
B. By Measurement—						
Eye Muscle of Loin	28	61·9	58·3	72·6	65·4	65·9
Back-fat Thickness	20	80·0	56·6	72·5	78·8	74·0
Body Length	20	51·6	50·0	31·6	61·6	50·0
Leg Length	5	66·6	40·0	70·0	62·2	61·9
Total	115					Total all in Average all States
Total all in Average for Each State	..	65·5	60·8	66·2	69·9	66·9

Body Length is not good, although the average of 50 per cent., is pulled down by the Queensland entries, which gain only 31·6 per cent. It is interesting to note that these entries are all crossbred Middle Whites.

Leg Length at 61·9 per cent. is only spoilt by the Victorian entry with 40 per cent.

General Remarks.—The pigs were of good marketable quality, and a study of the individual reports and the analysis will, perhaps, give the clearest indication of the results which, at 66·9 per cent. for the whole competition, is good. Owing to the wide variation of breeds and crossbreds, a detailed analysis of results would be unjustified. We feel, however, that the consistently low marks for "*Body Length*" where the Middle White is used in crossing cannot be ignored. Although the Queensland entries cannot compete properly in the competition owing to the Shipping Company inadvertently losing six of their carcasses, it was decided to include the remaining carcasses of each entry, so that each competitor should have a report on a portion of his entry for future guidance.

Book Review

THEORY AND PRACTICE IN THE USE OF FERTILIZERS.

Firman E. Bear, Ph.D. Second Edition (Chapman & Hall, Ltd., London. 360 pp., 20/- English Price).

THIS useful text book discusses the points of view concerning fertilizer practices that have been developed in Europe and the United States of America by the many workers in this field since the time of Liebig of Germany, and of Lawes and Gilbert of Rothamsted.

The book was published originally in 1929, but, as pointed out in the preface to this second edition, progress in the manufacture and utilization of fertilizers has been so rapid since that time that certain changes in the text have become necessary. Several chapters have been rewritten entirely, and a chapter on "trace" elements has been added.

As one of the Wiley Agricultural Series, the book is published in clear type, well illustrated with photographs, diagrams, and tables, and fully indexed. J.B.

Wheat Crop Competitions

Wimmera Championship

By A. B. Hackwell, B.Agr.Sc., Agricultural Instructor, Hon. Sec., Farm Competitions Association.

THE wheat crop and fallow competitions conducted in the Victorian wheat belt by Agricultural Societies, with the assistance of the Department of Agriculture, have played an important part in raising the standard of wheat growing in this State, and, in effect have constituted one of the most successful forms of extension work undertaken in the wheat area. The contests have assisted in promoting, among other things, a greater use of improved varieties and in disseminating knowledge regarding fallow preparation, the importance of superphosphate, and of disease and weed control. Not only have the competitions a stimulating influence on the individual competitors but they also focus attention on the practices employed by the most successful farmers and in those directions also, they are of distinct educational value.

Since 1926 the organization of these competitions has been carried out by the Farm Competitions Association of Victoria, which is comprised of representatives of the Department of Agriculture and various agricultural organizations in the wheat belt. The association regulates and co-ordinates the local competitions, arranges for the appointment of judges, and for the publication of the reports. A handsome, framed certificate is awarded each year by the association to the winning exhibitor in each section of the competitions. In the past season 28 competitions were held, fifteen of which were judged by departmental officers, and thirteen by nominated practical farmers, and in all 46 certificates were awarded.

In expanding its activities the association has decided to inaugurate district championships for wheat crops in various zones of the State, commencing this year with a competition for the Champion Wheat Crop of the Wimmera. This must be regarded as a progressive step, and the new contests will serve to draw attention to the high productive capacity of Victoria's wheat growing districts.

The Royal Agricultural Society of Victoria has provided £50 in prize money for this year's championship, £40 to be awarded to the winning exhibitor, and £10 to the society conducting the local competition which provides the champion crop. In addition, a special certificate will be awarded to the winner.

The championship will be open only to the best wheat crops (50 acres in area) exhibited in the local crop competitions conducted in the Wimmera by societies affiliated with the Farm Competitions Association. At the present time these competitions are conducted by nine Wimmera agricultural societies, namely, Charlton, Dimboola, Donald, Jeparit, Kaniva, Nhill, Rupanyup, Warracknabeal, and Wycheproof. It should be noted by any other Wimmera societies desiring to give their members an opportunity of participating in the championship that it will first be necessary for such societies to institute a local crop competition this year, and the winning exhibits in these contests would automatically compete in the championship, provided other conditions were complied with.

The rules of the championship are as follow :—

1. (*a*) The championship shall be open only to the best wheat crops (50 acres in area) exhibited in the local crop, or crop and fallow competitions conducted by Wimmera societies affiliated with the Farm Competitions Association (Victoria).

The best crop (50 acres) in each local competition, as determined by the judge of that contest, shall be automatically eligible to compete in the championship, provided that all other conditions are complied with. Should the best crop in the local competition be ineligible for the championship, the next best eligible crop may compete.

(*b*) Where there is more than one section in the local competition the best crop (one only) throughout all the sections shall contest the championship.

2. The exhibit shall be 50 acres in area, all in one piece, and sown with not more than two officially-named varieties of wheat, and it must be clearly defined at judging time by hay tracks or stakes.

3. The crop must be grown on land fallowed in the previous year. The crop (or the fallow on which it is grown) must not have been artificially watered. Crop grown on two-years fallow shall be ineligible.

4. The championship shall be judged by an officer of the Department of Agriculture, Victoria, in accordance with the scale of points adopted by the Farm Competitions Association.

5. Any crop eligible to compete in the championship may be withdrawn from the contest if, in the opinion

of both the judge of the local competition and the exhibitor of the said crop, the exhibit is not of sufficient merit to warrant inspection for the championship.

6. If an exhibit in the championship be damaged by storm or other cause prior to the visit of the championship judge it may be withdrawn, with the approval of its exhibitor, in favour of the next best crop in the local competition, but not more than one crop from each local competition shall be judged for the championship.

7. Each local society, if required, is to provide motor transport for the judge to the next centre where a championship exhibit is to be inspected.

8. In the event of the champion crop being a joint entry from an owner and share-farmer, the full prize shall be awarded to the share-farmer.

9. Before making his award the judge may re-inspect any exhibit while it is being harvested, should he so desire.

10. The actual yield per acre of the crop awarded the championship shall be determined by the Department of Agriculture at harvest time.

11. Should any circumstance arise not provided for in the rules, the matter shall be decided by the Chairman of the Farm Competitions Association.

Butter Production and Export

The following table shows:—

(*a*) Factory production of butter and cheese in Victoria for the period July, 1937, to March, 1938, compared with the corresponding period of 1936–37; and

(*b*) Quantities and percentages of various grades of bulk butter examined in Victoria for export from 1st July, 1937, to 30th April, 1938, in comparison with the corresponding period of 1936–37.

FACTORY PRODUCTION OF BUTTER AND CHEESE IN VICTORIA (QUANTITIES IN TONS).

Month.	Butter.		Cheese.	
	1937–38.	1936–37.	1937–38.	1936–37.
July to January	44586	47,214	5,190	4,049
February	4,596	5,874	504*	466
March	4,247†	5,080	500†	423
Totals, 9 months	53,429†	58,168	6,194†	4,938

* Revised. † Subject to Revision.

BULK BUTTER EXAMINED IN VICTORIA FOR EXPORT (QUANTITIES IN TONS).

Period.	1937–38. How Graded—				Total.	Period.	1936–37. How Graded—				Total.
	Ch.	1st.	2nd.	Pty.			Ch.	1st.	2nd.	Pty.	
1st July to 26th March ..	21,712	8,778	1,946	95	32,531	1st July to 27th March ..	25,777	8,624	2,407	391	37,199
27th March to 30th April ..	825	192	140	8	1,165	28th March to 1st May ..	1,198	468	187	39	1,892
Totals 1st July to 30th April ..	22,537	8,970	2,086	103	33,696	Totals 1st July to 1st May ..	26,975	9,092	2,594	430	39,091
Percentages ..	66·9	26·6	6·2	0·3	..	Percentages ..	69·0	23·3	6·6	1·1	..

Potato Manurial Trials

Results for 1937-38

By J. T. Ramsay, Potato Expert.

Portion of the potato manurial trials at Coragulac.

BY arrangement with the Colac Agricultural Society, manurial trials on potatoes were established at Coragulac by the Department of Agriculture for the first time last season. The soil utilized was a chocolate volcanic loam which had been in grass for two years. On analysis this soil appears to be exceedingly rich.

Cultural treatment prior to planting on the 8th September, 1937, consisted of ploughing, harrowing and rolling, and the ground was in good order when the planting took place. The variety used was Up-to-date.

The season was very dry, but all the plots made good growth, the only noticeable difference during the growing period being a deeper green in the foliage of the plots receiving nitrogen (sulphate of ammonia). The growth of the tops of the variously treated sections showed no outstanding difference throughout the season.

Harvesting was carried out on 8th February, 1938. The yields, set out in Table I., show very little variation from the "no manure" plots, in fact, only one of the manures, viz., the "3 and 1," mixture of superphosphate and sulphate of ammonia, showed any increase over the unmanured sections, and that was slight only. The other manures, the results of which are given in detail, showed practically no difference between one another in their ability to increase yields.

That the season was abnormal, and the trials have been conducted for one year only, must be borne in mind. The results, therefore, cannot be taken as conclusive without further tests being made. It is proposed to carry on the trials for a period of at least five years, and further, to include potassium sulphate in the fertilizer treatments.

TABLE I.—POTATO MANURIAL TRIALS, CORAGULAC, 1937–38.

Manure per Acre.	Weight Marketable Tubers.
	T. C.
Super. 2 cwt. per acre	6 10
Super. 3 cwt. per acre	6 7
Super. 3 cwt. per acre	6 5
No manure	6 9
Super., 3 cwt. + amm. sulph., 1 cwt. ..	7 2
Super., 3 cwt. + amm. sulph., 2 cwt. ..	6 5

ILLOWA.

The plots at Illowa were sown on volcanic soil during the first week in August, 1937. The paddock had been down to pasture for eight years, and planting was done straight under the sod. The varitey used was Early Manistee ex Portland. Subjected to a long dry spell during the flowering period, when moisture is most needed for a full crop, the crop yielded much lighter than usual.

Though the results are somewhat erratic, an appreciable increase, due to manurial treatment is evident, but this season's increases are much below the average of the past nine years. On present season's prices, however, the yields from plots receiving fertilizers show a profit compared with those from unmanured areas, without taking into consideration any residual benefits.

TABLE II.—POTATO MANURIAL TRIALS, ILLOWA, 1937–38.

Manure per Acre.	Weight Marketable Tubers.	Increase due to Manure.	Percentage Increase.
	T. C.	T. C.	%
Super., 2 cwt. ..	4 10	0 9	11
Super., 3 cwt. ..	4 9	0 8	10
Super., 4 cwt. ..	5 7	1 6	32
No manure	4 1	..	..
Super., 3 cwt. + sulp. amm., 1 cwt. ..	5 0	0 19	23
Super., 3 cwt. + sulp. amm., 2 cwt. ..	5 2	1 1	26

The figures shown in Table II. are the total market-sized tubers harvested, and were arrived at by averaging the weights dug from eight different sections of each manurial treatment. The average during the last ten years is shown in Table III.

TABLE III.—AVERAGE RESULTS, ILLOWA, FOR TEN YEARS, 1928–29 TO 1937–38.

Manure per Acre.	Average Yield.	Percentage Increase.
	T. C.	%
Super., 2 cwt.	6 12	31
Super., 3 cwt.	7 3	42
Super., 4 cwt.	7 5	44
No manure	5 1	..
Super., 3 cwt. + amm. sulp., 1 cwt.	7 12	50
Super., 3 cwt. + amm. sulp., 2 cwt.	6 4	35*

* 5 years only.

NEERIM.

The Neerim district has been coming into prominence during the past few years as a potato growing area which produces fine quality tubers. As a considerable difference of opinion exists among growers in the district as to the most effective manurial treatment for potato crops it was decided to establish, last season, tests with various artificial manures. An area of 2 acres on the farm of Mr. J. Halvy was selected for this purpose it being regarded as typical of a large section of the Neerim country which is utilized for potato production.

Planting was carried out on the 25th and 26th October, 1937, the soil being in fair condition. The paddock had been in grass for sixteen years. The preparatory cultivation was as follows:—ploughed in July, harrowed and cross-harrowed, and ploughed again in September, followed by four harrowings at intervals. Planting was done by hand behind a single-furrow plough and the manure was distributed in the furrow with the seed. The variety used was Late Carman, locally grown for some years. The manurial variations were sown in duplicate allowing one acre for each complete range of manures.

The season was favorable and good yields were obtained, the results of which are detailed in Table IV. Two inspections of the crop were made, the first towards the end of December, and the second during the first week in February. On both these occasions very good progress in growth was noted, the most striking difference being the poorer development of the unmanured sections. There was not much to choose between any of the manured portions at these stages.

Harvesting was done on 5th April, when very marked differences in yield between the manured and unmanured plots were revealed. The variations in tonnage between the manured lots were somewhat erratic, inasmuch as the dressing of 6 cwt. superphosphate almost equalled the yield of 6 cwt. superphosphate and 1 cwt. sulphate of potash, and exceeded by fully 30 per cent. (1 ton 18 cwt.) the yield from the "6 and 1" application of superphosphate and ammonia. The fact that the dressings containing sulphate of potash gave the heaviest tonnages is not surprising, in view of the consistent increases recorded over an eleven-year period from the potassic combinations at Warragul, on a similar class of soil. At Warragul the average increase, due to superphosphate and potash (7 cwt. per acre), for the period mentioned was 92 per cent., equal to 4 tons per acre per annum.

The results in Table IV. are for one year only, and the only definite conclusion to be taken at this juncture is that a marked improvement can be expected from an application of artificial manure. On present prices the results represent vastly increased monetary returns per acre, and indicate a highly profitable investment.

Potato manurial trials at Neerim showing left, unmanured; right, manured plots.

TABLE IV.—POTATO MANURIAL TRIALS, NEERIM, 1937–38.

Manure per Acre.	Weight Marketable Tubers.	Increase due to Manure.	Percentage Increase.
	T. C.	T. C.	%
Super., 4½ cwt. ..	9 10	3 9	57
Super., 6 cwt. ..	11 0	4 19	82
No manure	6 1	..	..
Super., 6 cwt. + pot. sulp., 1 cwt. ..	11 5	5 4	86
Super., 6 cwt. + amm. sulp., 1 cwt. ..	9 2	3 1	50
Super., 6 cwt. + amm. sulp., 2 cwt. ..	10 17	4 16	79
Super., 6 cwt. + pot. sulp., 1 cwt. + amm. sulp., 1 cwt. ..	12 1	6 0	99

A sample of soil, taken from an unmanured section of the trials, was submitted to the Agricultural Research Chemist for chemical analysis. The results, in parts per 100,000 of air dried sample, are as follow:—

Nitrogen	.. 308
Phosphoric Acid (P_2O_5)	.. 125
Potash (K_2O) ..	.. 168
Lime (CaO) ..	.. 310
Magnesia (MgO) ..	.. 214
Chlorine	.. 12
Reaction (pH value)	.. 5·7

BEECH FOREST.

Exceptionally favorable results were obtained from the Beech Forest plots this season. They were planted with the Late Carman variety during the last week in November, 1937, under excellent sowing conditions. On the whole, favorable conditions for growth were experienced until the end of February, and up to that time there were marked differences shown in the effects of the various manures. The plots treated with ammonium sulphate showed the greatest growth and promise, while the unmanured sections were poor.

An attack of leaf-blight, early in March, helped by heavy foggy weather, considerably checked development with consequent cutting down of the yield of marketable tubers per acre. Notwithstanding this setback, however, fair yields of tubers of excellent quality and shape were harvested. Compared with the unmanured plots, those treated with artificial manure showed to greater advantage than usual. The plots were harvested on the 20th April last at a Field Day arranged by the Beech Forest and Otway Produce Society, and an excellent demonstration was given of the great advantage to be derived from the judicious use of artificial fertilizers in this class of country. All of the manures used will show a handsome profit on this season's market values, as may easily be calculated from the

increases gained over the light crop of 1 ton 14 cwt. yielded by the no-manure section.

A study of the table of results (Table V.) will show the tremendous increases caused by the use of manures. The heaviest dressing of 9 cwt. superphosphate plus 2 cwt. ammonium sulphate per acre, more than trebled the crop, but it is doubtful if such a heavy dressing would be profitable in a year of low prices. The outstanding feature of these trials, which have been conducted on the farm of Mr. A. Towers for the last seven years, is the consistent performance of the superphosphate and ammonium sulphate combinations as compared with superphosphate alone. The addition of 1 cwt. ammonium sulphate to the 6 cwt. of superphosphate, over the period in question, just doubled the yields obtained from the superphosphate alone, the percentage increases being:—6 cwt. superphosphate, 61 per cent.; 6 cwt. superphosphate and 1 cwt. ammonium sulphate, 123 per cent. Another feature of these results is the lack of response by the crop to potash applications. The average tonnage for the seven-year period of the tests for superphosphate and ammonia, compared with superphosphate, ammonia, and potash, is as follow:—6 cwt. superphosphate plus 1 cwt. ammonium sulphate, 7 tons 3 cwt.; 6 cwt. superphosphate plus 1 cwt. ammonium sulphate plus 1 cwt. potash sulphate, 7 tons.

TABLE V.—POTATO MANURIAL TRIALS, BEECH FOREST, 1937–38.

Manure per Acre.	Weight Marketable Tubers.	Increase due to Manure.	Percentage Increase.
	T. C.	T. C.	%
Super., 6 cwt. ..	5 12	3 18	205
Super., 6 cwt. + amm. sulp., 1 cwt. ..	7 4	5 10	290
Super., 6 cwt. + amm. sulp., 2 cwt. ..	6 18	5 4	274
Super., 6 cwt. + amm. sulp., 1 cwt. + pot. sulp., 1 cwt. ..	6 14	5 0	263
No manure	1 14		
Super., 9 cwt. ..	6 2	4 8	232
Super., 9 cwt. + amm. sulp., 1 cwt. ..	7 13	5 19	313
Super., 9 cwt. + amm. sulp., 2 cwt. ..	7 16	6 2	321

TABLE VI.—AVERAGE RESULTS, BEECH FOREST, FOR SEVEN YEARS, 1931–32 TO 1937–38.

Manure per Acre.	Average Yield.	Percentage Increase.
	T. C.	%
Super., 6 cwt.	5 3	61
Super., 6 cwt. + amm. sulp., 1 cwt.	7 3	123
Super., 6 cwt. + amm. sulp., 2 cwt.	7 12	138
Super., 6 cwt. + amm. sulp., 1 cwt. pot. sulp., 1 cwt.	7 0	119
No manure	3 4	..
Super., 9 cwt.	5 13	77
Super., 9 cwt. + amm. sulp., 1 cwt.	7 11	136
Super., 9 cwt. + amm. sulp., 2 cwt.,	8 10	166

Manure Costs.

The question of the cost of manures, and whether they return a profit from their use, is one which vitally concerns the potato grower. The following table of costs per ton of increase is calculated on the average additional yield from each manurial variation for the past seven years at Beech Forest.

Manure per Acre.	Cost per Ton Increase.
	s. *d.*
Super, 6 cwt.	11 6
Super, 6 cwt. + amm. sulp., 1 cwt. ..	9 9½
Super, 6 cwt. + amm. sulp., 2 cwt. ..	11 6
Super., 6 cwt. + amm. sulp., 1 cwt. + pot. sulp., 1 cwt.	14 1½
Super, 9 cwt.	13 9
Super., 9 cwt. + amm. sulp., 1 cwt. ..	10 5½
Super., 9 cwt. + amm. sulp., 2 cwt. ..	10 9½

From this interesting analysis may be calculated the monetary benefit obtained from the use of manures. Deduction should, of course, be made for the extra costs of bags, digging, and freight. As an illustration take the "6 cwt. superphosphate, plus 1 cwt. ammonium sulphate" figure:—The average increase in tonnage from this manure over the period was 3 tons 19 cwt. per acre. If £4 per ton be taken as the value of the crop for the period (this is considered a low estimate) then the increased value of this crop as compared with that from the unmanured area is approximately £16 per acre, which, even when costs for extra bags, freight, &c., have been deducted, shows a very appreciable monetary gain.

Fungicides and Insecticides

Brands Registered for 1938

By W. C. Robertson, Chemist

PROBABLY one of the greatest worries of the man on the land is the task of combating the depredations of insect pests and plant diseases. The Fungicides Act of 1928, as amended in 1935, was placed on the Statutes for the purpose of rendering assistance in this regard. By proclaiming standards for the main pest destroyers which are on the market, making it compulsory for manufacturers to register annually with the Director of Agriculture, a brand name for any pest destroyer which they sell and rendering it necessary for the guaranteed percentage of the active ingredient or ingredients to be stated on the label attached to all packages containing pest destroyers, the Act provides an efficient safeguard which has resulted in a marked improvement in the quality of the more important pest destroyers retailed in recent years. Periodic analyses of samples of pest destroyers either collected by Departmental officers or forwarded by users, offer a further means of affording protection to the farmer against inferior quality.

In the list of brands registered for 1938 and published in this issue, appear the essential particulars of approximately 400 brands of insecticides, fungicides, sheep dips and weed destroyers. The lengthy nature of the list is due to (*a*) a deal of duplication which is the direct result of business competition, (*b*) the wide range of pests and their activities and (*c*) the persistent demand on the part of the home gardener for something new and more effective. In the latter case, as the operations are more intensive the remedies provided are often more novel and interesting than economical.

Insecticides and Fungicides.

The principal insecticides and fungicides used in Victoria are lead arsenates, lime sulphur, nicotine sulphate and crude, miscible and emulsified oils. They are used mainly by the horticulturist. Special liquid sprays such as coal tar distillate and burgundy or copper soda are used to a lesser extent, while with the advent of the instantaneous formula for Bordeaux mixture this preparation in the dry powder form is rarely used by the orchardist. Lead arsenate, nicotine and nicotine sulphate, atomic sulphur, dry mix sulphur and lime, copper compounds and compound dusts, all in dust form are extensively used by the market gardener, while basic copper carbonate, formalin, bluestone or organic compounds containing mercury, are essential for treatment of the seed in successful cereal culture.

The question is often asked as to the advisability of the orchardist, market gardener, grazier or farmer making his own insecticidal preparations. The answer is that chemical sprays should be made by chemists in works where facilities for proper control and standardization are available. In the opinion of the writer, it is questionable whether the home made Bordeaux mixture, which is generally made by the orchardist, is of the desired composition and even standard so essential to the perfect spray. An orchardist on more than one occasion has been discovered making Bordeaux mixture with agricultural lime instead of the high grade chemical lime or the equivalent in hydrate (slaked lime). In the preparation of the simple tobacco extract, which merely requires the digestion of tobacco in water rendered slightly alkaline with washing soda, orchardists have been found using the home-made extract which was far below strength because the waste tobacco purchased contained an abnormally low percentage of nicotine.

Sheep Dips.

There are nineteen brands registered for the standard arsenical sheep dip and a similar number for the combined type in most of which the killing efficiency of the arsenic is associated with that of tar acids and/or derris extract. From the evidence of increasing use of the latter and private reports it would appear that this powerful insecticide is already proving useful to the Victorian sheep farmer.

Weed Destroyers.

The nine brands of non-poisonous weed destroyers are, with one exception, of the chlorate type. The latest innovation, viz., "Atlacide" apparently, is a mixture of sodium and calcium chlorates prepared for the express purpose of reducing the danger associated with the inflammability of sodium chlorate without reducing its weedicidal efficiency.

In the poisonous arsenical section (liquid and powder) there are fourteen brands registered. Arsenical weedicides are extensively used in the eradication of noxious weeds and to a lesser extent in timber killing. In recent years, particularly in the case of the eradication of the blackberry pest, the form in which the arsenic is used has changed from the trioxide to the pentoxide with beneficial results.

Nicotine Sulphate.

In the past it has been the practice for nicotine sulphate, which is the most expensive of the common farm insecticides, to be sold by both weight and measure. Apart from the fact that liquids should be sold by liquid measure this practice has proved confusing. A 10-lb. tin of nicotine sulphate does not measure a gallon, although the tin container may have that capacity. An imperial gallon measure of nicotine sulphate will weigh approximately $11\frac{3}{4}$ lb. As the usual method for dilution practised on the farm is by liquid measure, the manufacturer and/or importer of nicotine sulphate will be required to sell the insecticide by measure in future.

The strengths of nicotine spray solutions usually recommended are 1 in 600 (strong) to 1 in 1,200 (weak). To find the number of gallons of water required to every gallon of nicotine sulphate for a solution of any given nicotine strength, multiply the figure representing the hundreds in the dilution range by 47 and the answer will be the number of gallons of water necessary. For example, to make a solution of 1 in 600, 47 x 6 = 282 gallons of water. Similarly in the case of a strength 1 in 1,200, 47 x 12 = 564 gallons of water, as the volume required for every gallon of nicotine sulphate used.

Lime Sulphur Solutions.

The quality of concentrated liquid lime sulphur has varied to such an extent since a standard was proclaimed that it is intended to alter the standard by fixing a minimum and maximum for the content of polysulphide sulphur and the total soluble sulphur, instead of a minimum content as at present. During recent years brands of liquid lime sulphur which have been guaranteed to contain 20 per cent. polysulphide sulphur and 28 per cent. total soluble sulphur have been found, on analysis, to contain 20 to 25 per cent. polysulphide sulphur and from 28 to 33·5 per cent. total soluble sulphur.

Assuming the recommendation for summer spray strength to be 1 gallon of lime sulphur to 80 gallons of water based on the standard 20/28 strength of the concentrated liquid and that the orchardist is supplied with a much stronger lime sulphur, say 25/33, the diluted spray would be too strong at 1 in 80. The correct dilution in this instance based on the actual content of polysulphide sulphur, viz.:—25 per cent. should have been 1 gallon of the lime sulphur to 100 gallons of water.

The proposed alteration to the standard will avoid any risks of this nature, because all brands of concentrated liquid lime sulphur will contain from 19 to 21 per cent. of polysulphide sulphur with 27 to 29 per cent. of total soluble sulphur, the thio-sulphate figure remaining as at present, viz., not more than 2·5 per cent., all calculated as weight in volume. This means that the variation in the quality of lime sulphur will be definitely limited and it will be an offence to exceed 21 per cent. polysulphide and 29 per cent. total soluble sulphur or to supply lime sulphur which does not reach the minimum percentages, viz., 19 per cent. and 27 per cent. respectively.

In conclusion, it is necessary to point out once again the desirability of exercising the greatest care in spraying, dipping, or dusting, irrespective of the fungicide, insecticide, sheep dip or weed destroyer being used. Quite recently a spray-man lost his life through making cigarettes and smoking them while spraying lead arsenate without taking the necessary precautions against arsenical poisoning. Last season a spray-man was discovered busily spraying arsenate of lead with ungloved hands which were badly affected with festered sores. In all cases of spraying it is extremely advisable to adopt a method which is based on care and cleanliness, so that not only the serious effects on the operator are minimised, but also the harmful ones.

LIST OF FUNGICIDES, INSECTICIDES, VERMIN DESTROYERS, AND WEED DESTROYERS REGISTERED AT THE OFFICE OF THE DIRECTOR OF AGRICULTURE UNDER THE FUNGICIDES ACT 1935 (No. 4295), FOR THE YEAR 1938.

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).				Manufacturer or Wholesale Dealer.
	Arsenic Pentoxide (As_2O_5) Calculated on the Dry Basis.		Acidity Calculated as Nitric. Dry Basis.	Content of Water.	
	Total.	Water Soluble.			
Arsenate of Lead (Paste).	Minimum.	Maximum.	Maximum.	Maximum.	
	%	%	%	%	
Aero	31·5	·25	·2	50·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Pinnacle	32·0	·50	·2	50·0	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Berger's Mercury	31·0	·50	·2	50·0	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
" (Colloidal)	31·0	·50	·2	50·0	" " "
Blue Bell	31·0	·50	·2	50·0	Blyth Chemicals Ltd., Prahran-grove, Elsternwick
Elephant	31·0	·50	·2	50·0	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Lion	31·0	·50	·2	50·0	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Lunevale Lethalate (Colloidal)	31·0	·04	·2	50·0	Brown and Dureau Ltd., 422 Collins-street, Melbourne
Vallo	32·0	·50	·2	50·0	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Tip Top	32·0	·50	·2	50·0	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne
Cooper's	31·0	·50	·2	50·0	Ramsay and Treganowan Ltd., 475 Latrobe-street, Melbourne
Unity Colloidal	31·0	·50	·2	50·0	T. E. Butler, 486 Collins-street, Melbourne
Arsenate of Lead (Powder).					
Aero	31·5	·25	·2	..	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Pinnacle	32·0	·50	·2	..	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Berger's Mercury	31·0	·50	·2	..	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
Blue Bell	31·0	·50	·2	..	Blyth Chemicals Ltd., 31 Queen-street, Melbourne
Cooper's Arsinette	31·0	·50	·2	..	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Elephant	31·0	·50	·2	..	Jaques Pty Ltd., 31 Queen-street, Melbourne
Lion	31·0	·50	·2	..	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Unity	32·5	·50	·2	..	T. E. Butler, 486 Collins-street, Melbourne
Summit	32·0	·50	·2	..	" " "
Lunevale	32·74	·253	·2	..	Brown and Dureau Ltd., 422 Collins-street, Melbourne
Ortho Standard	31·0	·50	·2	..	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Plane	31·0	·50	·2	..	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
Vallo	32·0	·50	·2	..	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Tip Top	32·0	·50	·2	..	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne
Sherwin-Williams	31·0	·50	·2	..	Lawford's Fruit Exchange Pty. Ltd., Doncaster
Sigma	32·0	·50	·2	..	Sigma Co. Ltd., 562 Little Bourke-street, Melbourne
Calcium Arsenate.					
Pinnacle	40·0	..	..	..	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Elephant	40·0	..	..	..	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Lion	40·0	..	..	..	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Vallo	40·0	..	..	..	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Tip Top	40·0	..	..	..	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne

LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).	Manufacturer or Wholesale Dealer
Sulphate of Copper (Bluestone).		
Commonwealth	Copper (Cu) 25·0 %	Commonwealth Fertilisers and Chemicals Ltd., 65 William-street, Melbourne
Cresco	" 24·0 "	Cresco Fertilisers Ltd., Geelong
Blyth's	" 24·0 "	Blyth Chemicals Ltd., 31 Queen-street, Melbourne
Jaques'	" 24·0 "	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Macclesfield	" 25·0 "	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne, C.1
Pannifex	" 25·0 "	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
" Instant	" 25·0 "	
Vallo (Lump)	" 25·0 "	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
" (Neige Crystals)	" 25·0 "	
" (Powdered)	" 25·0 "	" " " " "
" (Bordeaux Manufacture)	" 25·0 "	" " " " "
Lion	" 25·0 "	" " " " "
Neptune Snow	" 25·0 "	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Faulding's	" 24·5 "	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
E.S.A.	" 25·0 "	F. H. Faulding and Co. Ltd., 123–25 Lonsdale-street, Melbourne
		Elder Smith and Co. Ltd., 95 William-street, Melbourne

	Percentage Copper (Cu)	Percentage Copper (Cu) Water Soluble.	Percentage through 200-mesh Sieve.	
Basic Copper Carbonate.	%	%	%	
Cresco	50·0	·01	98·5	Cresco Fertilisers Ltd., Geelong
Sickle	52·0	Nil	99·8	Commonwealth Fertilisers and Chemicals Ltd., 65 William-street, Melbourne
Smutol (Oxychloride)	52·0	Nil	99·8	
Vallo Anti-Bunt	50·0	·25	97·5	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne

Dry Bordeaux Mixture (Powder).		
Pinnacle	Copper (Cu) 12·50 %	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Elephant	" 20·00 "	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Lion	" 12·50 "	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Vallo	" 12·50 "	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Coposil	" 18·50 (3·50 per cent. zinc)	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Ortho (Powdered)	" 12·75 "	" " " "
X.L.	" 13·00 "	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Tip Top	" 12·50 "	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne
Burgundy or Copper-Soda.		
Vallo Burgundy Mixture	Copper (Cu) 12·5 %	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Lion Sporocide	" 12·5 "	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Neptune Copper Spray	" 12·5 "	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
Blue Bell	" 12·0 "	Blyth Chemicals Ltd., 31 Queen-street, Melbourne
Elephant	" 12·0 "	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Paris Green.		
Elephant	Arsenious Oxide (As_2O_3) 55·0 %	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Lion	" " " 50·0 "	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Felton, Grimwade, and Duerdin's	" " " 50·0 "	Felton, Grimwade, and Duerdin's Ltd., 342–6 Flinders-lane, Melbourne
Tip Top	" " " 50·0 "	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne
Faulding's	" " " 60·0 "	F. H. Faulding and Co. Ltd., 123–25 Lonsdale-street, Melbourne
Pinnacle	" " " 50·0 "	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond

LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).			Manufacturer or Wholesale Dealer.
Miscellaneous.				
Yarra Cheshunt Compound	Copper (Cu)	% 5·0		J. Parsons and Co., 155 Yarra-street, Abbotsford
Faulding's (London Purple)	Arsenious Oxide (As_2O_3)	44·0		F. H. Faulding and Co. Ltd., 123–25 Lonsdale-street, Melbourne
Cooper's Bordinette	Copper (Cu)	12·7		Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Schloesings Bouillie	"	12·7		Lawford's Fruit Exchange Pty. Ltd., Doncaster, Victoria
Bouisol	"	15·0		" " " " "
Lime.				
Neptune	Available Lime (CaO)	% 80		Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
Pannifex Bordeaux Rock	" " "	80		Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Vallo Selected	" " "	80		Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
	Thio-Sulphate Sulphur.	Poly-Sulphide Sulphur.	Total Soluble Sulphur.	
	Weight in Volume.			
Concentrated Lime-Sulphur (Solution).	%	%	%	
Pinnacle	2·5	20·0	28·0	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Blue Bell	2·5	20·0	28·0	Blyth Chemicals Ltd., 31 Queen-street, Melbourne
Elephant	2·5	20·0	28·0	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Lion	2·5	20·0	28·0	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Neptune	2·5	20·0	28·0	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
Pannifex	2·5	20·0	28·0	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Vallo	2·5	20·0	28·0	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
X.L.	1·8	20·0	28·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Tip Top	2·5	20·0	28·0	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne
XL. Dry Lime—Sulphur Powder	2·5	40·0	55·0	Ramsay and Treganowan Ltd., 475 Latrobe-street, Melbourne
Unity	2·0	19·21	27·29	T. E. Butler, 486 Collins-street, Melbourne
L.F.X.	1·5	21·0	28·0	Lawford's Fruit Exchange Pty. Ltd., Doncaster
	Sulphur.	Calcium Hydrate.		
Lime and Sulphur (Dry Mix).	%	%		
Essen (No. 1)	62·6			Essen Chemical Bye Products Co. Pty. Ltd., 403–405 Neerim-road, Murrumbeena
" (No. 2)	46·0			" " " "
Pannifex	62·5	35·5		H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Vallo	64·0	35·6		Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
X.L.	66·0	33·0		Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Sulphur.	%			
Commonwealth (Dusting)	Sulphur 90·0			Commonwealth Fertilisers and Chemicals Ltd., 65 William-street, Melbourne
" (Powdered)	" 99·5			" " " " "
" (Atomic Dusting)	" 90·0			" " " " "
" (Atomic)	" 99·5			" " " " "
Cresco (Dusting)	" 89·4			Cresco Fertilisers Ltd., Geelong
" (Atomic)	" 99·5			" " " "
Flotox (Wettable)	" 98·0			H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne

LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).	Manufacturer or Wholesale Dealer.
Sulphur—continued.	%	
Lion (Atomic)	„ 95·0	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Neptune (Powdered)	„ 99·0	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
Vallo (Powdered)	„ 99·5	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
„ (Dusting)	„ 90·0	„ „ „ „ „
„ (Wettable)	„ 98·0	„ „ „ „ „
„ (Colloidal)	„ 50·0	„ „ „ „ „
Cooper's (Colloidal)	„ 50·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Plane (Dusting)	„ 90·0	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
Ramtre (Dust No. 39)	„ 90·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
X.L. (Atomic)	„ 75·0	„ „ „ „ „
Neptune Chemical 23871	„ 50·0	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
Pannifex Atomic Dusting No. 31	„ 90·0	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Unity (Colloidal)	„ 50·0	T. E. Butler, 486 Collins-street, Melbourne
Spregan (Colloidal)	„ 50·0	Colloidal Sulphur Pty. Ltd., 466 Swanston-street, Carlton
Howard's (Colloidal)	„ 50·0	T. A. Stevenson, 19 San Mateo-avenue, Mildura
Nicotine Sulphate.	%	
Pinnacle	Nicotine 40	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Blue Bell	„ 38	Blyth Chemicals Ltd., 31 Queen-street, Melbourne
Cooper's	„ 40	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Elephant	„ 40	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Lion	„ 38	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Pannifex	„ 40	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Plane	„ 40	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
Vallo	„ 40	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Tip Top (Black Leaf 40)	„ 40	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne
Black Leaf 40 (P.D.S.)	„ 40	Producers Co-operative Distributing Society Ltd., 180 Franklin-street, Melbourne
„ „ „ (Neptune)	„ 40	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
T.E.B. in diamond	„ 40	T. E. Butler, 486 Collins-street, Melbourne
L.F.X.	„ 38	Lawford's Fruit Exchange Pty. Ltd., Doncaster
Grazcos	„ 40	The Graziers' Co-operative Shearing Co. Ltd., 90–92 William-street, Melbourne
Railton's	„ 40	James Railton, 133 Elizabeth-street, Melbourne
Sigma	„ 40	Sigma Co. Ltd., 562 Little Bourke-street, Melbourne
Tar Distillate.	%	
Cooper's Ovicide	Tar Oils 48, Phenols 10, Mineral Oil 20	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Vallo Ovicidal Wash	Emulsifiable Oils 89	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
I.C.I. (No. 1)	Tar Oil 70	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
„ (No. 2)	„ „ 35, Mineral Oil 35	„ „ „ „ „
L.F.X.	Tar Oils 50, Mineral Oils 20, Phenols 10	Lawford's Fruit Exchange Pty. Ltd., Doncaster

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LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).	Manufacturer or Wholesale Dealer.
Benzol Emulsion.		
Pinnacle	Benzol 30%	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Vallo	„ 30	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
White Spraying Oil or Emulsion.		
Pinnacle	White Mineral Oil 60·0%	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Atlantic	„ „ „ 86·0	Atlantic Union Oil Co. Ltd., 396 Collins-street, Melbourne
Blue Bell	„ „ „ 82·0	Blyth Chemicals Ltd., 31 Queen-street, Melbourne
Cooper's Alboleum	„ „ „ 80·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Elephant	„ „ „ 82·0	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Gargoyle	„ „ „ 82·0	Vacuum Oil Co. Pty. Ltd., 29 Market-street, Melbourne
Kleenup	„ „ „ 83·0	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Lion	„ „ „ 80·0	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Neptune	„ „ „ 85·0	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
„ (Clarifol)	„ „ „ 85·0	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Vallo (Prepared)	„ „ „ 89·0	
Volck	„ „ „ 83·0	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
White Spray	„ „ „ 85·0	Shell Co. of Australia Ltd., 163 William-street, Melbourne
X.L.	„ „ „ 80·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Tip Top	„ „ „ 80·0	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne
L.F.X.	„ „ „ 80·0	Lawford's Fruit Exchange Pty. Ltd., Doncaster
Unity	„ „ „ 82·5	T. E. Butler, 486 Collins-street, Melbourne
Pale Spraying Oil.		
Gargoyle	Pale Mineral Oil 82·0%	Vacuum Oil Co. Pty. Ltd., 29 Market-street, Melbourne
Neptune Palsol	„ „ „ 85·0	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
Shell Pale-Spray	„ „ „ 85·0	Shell Co. of Australia Ltd., 163 William-street, Melbourne
Shellicide D.	„ „ „ 85·0	
Vallo	„ „ „ 83·0	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
P.C.S.	„ „ „ 85·0	Shell Co. of Australia Ltd., 163 William-street, Melbourne
Red Spraying Oil.		
Pinnacle	Red Mineral Oil 86·0%	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Atlantic	„ „ „ 89·0	Atlantic Union Oil Co. Ltd., 396 Collins-street, Melbourne
Blue Bell (Prepared)	„ „ „ 85·0	Blyth Chemicals Ltd., 31 Queen-street, Melbourne
Elephant (Prepared)	„ „ „ 85·0	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Gargoyle	„ „ „ 85·0	Vacuum Oil Co. Pty. Ltd., 29 Market-street, Melbourne
Lion (Prepared)	„ „ „ 80·0	Orchard Sprays Pty. Ltd., 549 Church-street, Richmond
Neptune "A"	„ „ „ 85·0	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
„ "C"	„ „ „ 70·0	
Shell Red Spray	„ „ „ 85·0	Shell Co. of Australia Ltd., 163 William-street, Melbourne
„ „ „ "C"	„ „ „ 70·0	
Tip Top (Prepared)	„ „ „ 86·0	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne
Vallo	„ „ „ 86·0	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
X.L. (Prepared)	„ „ „ 85·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Harbas	„ „ „ 75·0 (and 5·5% Tar Acid)	Lawford's Fruit Exchange Pty. Ltd., Doncaster
L.F.X.	„ „ „ 85·0	T. E. Butler, 486 Collins-street, Melbourne
Unity	„ „ „ 85·0	
Pannifex	„ „ „ 83·0	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne

LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).	Manufacturer or Wholesale Dealer.
Crude Spraying Oil.		
Neptune	Mineral Oil 85·0 %	Neptune Oil Co. Pty. Ltd., 532 Bourke-street, Melbourne
Unity	" " 85·0 %	T. E. Butler, 486 Collins-street, Melbourne
X.L. (Prepared)	" " 80·0 %	Ramsay and Treganowan Ltd., 469-477 Latrobe-street, Melbourne
X.L.	" " 100·0 %	" " " " "
Arsenic (Oxides).		
Vallo (White)	Arsenic (As_4) 75·37 %; (As_2O_3) 99·50 %	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
" (Pentoxide)	Arsenic Pentoxide (As_2O_5) 83·00 %	" " " " "
Felton, Grimwade, and Duerdin's (White)	Arsenic (As_4) 74·20 %; (As_2O_3) 98·00 %	Felton, Grimwade, and Duerdins Ltd., 342-6 Flinders-lane, Melbourne
Faulding's (White)	Arsenic (As_2O_3) 98·00 %	F. H. Faulding and Co. Ltd., 123-25 Lonsdale-street, Melbourne
Miscellaneous.		
Vallo (Orchard Tree Bands)	Beta-Naphthol 20·00 %	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Tuberol	Stearoptenes and Oleoptenes 70·00 %	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Pannifex Worm Killer	Sodium Hypochlorite 6·50 %	" " " " "
" Harlequin Bug Killer	Mineral Oil 10·00 %; Stearoptenes and Oleoptenes 10·00 %	" " " " "
Shirlan "R.A."	Salicylanilide 8·40 %	Ramsay and Treganowan Ltd., 469-477 Latrobe-street, Melbourne
" "A.G."	25·00 %	" " " " "
Sickle Carbon Bisulphide	Carbon Bisulphide 99·00 %	Commonwealth Fertilisers and Chemicals Ltd., 65 William-street, Melbourne
" Formalin	Formaldehyde 38·00 %	" " " " "
Faulding's Formalin	" 37·00 %	F. H. Faulding and Co. Ltd., 123-25 Lonsdale-street, Melbourne
Felton, Grimwade, and Duerdin's Formalin	" 38·00 %	Felton, Grimwade, and Duerdins Ltd., 342-6 Flinders-lane, Melbourne
Cooper's Worm Killer	Saponaceous Vegetable Matter 33·33 %	Ramsay and Treganowan Ltd., 475 Latrobe-street, Melbourne
Champion Manurial Insecticide and Fungicide	Naphthalene 10·00 %; Stearoptenes and Oleoptenes 3·00 %; Tar Acids 1·00 %; Sulphur 3·00 %; Copper ·60 %	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Kill-A-Mite Manurial Insecticide (coarse)	Phenol 2·50 %; Naphthalene 2·50 %; Hydrocarbon oils 4·00 %	Kill-a-Mite Co., 67-75 Roden-street, West Melbourne
Cooper's Apterite	Naphthalene 18·00 %	Ramsay and Treganowan Ltd., 469-477 Latrobe-street, Melbourne
" Soil Sterilizer	Tar Acids 44·00 %; Neutral Tar Oils 29·00 %	" " " " "
Orthodichlorbenzene	Orthodichlorbenzene 100·00 %	Imperial Chemical Industries of Aust. and N.Z. Ltd., 376-380 Collins-street, Melbourne
Hortosan	Mercury 8·00 %	" " " " "
Agrosan	Organic Mercury Compound 2·60 %	" " " " "
Paradichlorbenzene	Paradichlorbenzene 100·00 %	" " " " "
Shirlan, W. S.	Sodium Salicylanilide 98·00 %	" " " " "
Slugdie	Nicotine ·40 %	" " " " "
X.L.All (Fumigating Tablets)	Naphthalene 10·00 %; Nicotine 27·00 %	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond; Law Somner and Co. Pty. Ltd., Elizabeth-street, Melbourne
Kill-a-Mite Manurial Insecticide (super-fine)	Naphthalene 1·25 %; Phenols 1·25 %; Hydrocarbon oil 2·50 %	Kill-a-mite Co., Roden-street, West Melbourne
Nodew	Sulphur 30·00 %; Potassium Carbonate 60·00 %	E. H. Page, 1264 High-street, Malvern
Ideal Slug and Snail Exterminator	Arsenic (As_2O_3) 2·00 %	" " " " "
Anti-pestick	Nicotine 20·00 %	" " " " "
Tip Top Kill-all	" ·12 %	Law Somner Pty. Ltd., 21-23 Elizabeth-street, Melbourne
Clensel	Oil of Citronella 2·00 %; Ammonia 2·30 %; Potash Soap 60·00 %	Clensel Products Pty. Ltd., Youell and Cowper streets, Footscray
Ceresan	Mercury 1·50 %	Dalgety and Co. Ltd., 461-71 Bourke-street, Melbourne
Grenedeth	Nicotine ·58 %; Sulphur 18·19 %; Paradichlorbenzene 2·27 %; Essential oil res. 4·22 %; Naphthalene 2·60 %	E. H. Page, 1264 High-street, Malvern, Victoria
Germisan	Sodium salt of 30·00 %; Cyan-mercury cresol; Sodium chloride 60·00 %	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne

LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).		Manufacturer or Wholesale Dealer.
Nicotine Dusting Powders.		%	
G. J. Coles and Co. Tobacco Dust	Nicotine	·65	G. J. Coles and Co. Ltd., 282 Little Collins-street, Melbourne
Pestend	"	·50	W. D. and H. O. Wills (Aust.) Ltd., 411-423 Swanston-street, Melbourne
Pestide	"	·50	" " " " "
Plane Nicodust	"	2·50	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
" " No. 3	"	3·00	" " " " "
" " No. 5	"	5·00	" " " " "
Elephant Duston No. 1	"	4·00	Jaques Pty. Ltd., 31 Queen-street, Melbourne
Nictar No. 2	"	3·00	P. Alkemade and Sons, 535 Little Lonsdale-street, Melbourne
Ramtre No. 4	"	2·00	Ramsay and Treganowan Ltd., 469-477 Latrobe-street, Melbourne
" No. 5	"	3·00	" " " " "
" No. 6	"	4·00	" " " " "
Vallo N.40	"	2·50	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Pannifex Niko Dust, No. 1	"	2·00	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
" " " No. 2	"	2·50	" " " " "
" " " No. 3	"	3·00	" " " " "
" " " No. 4	"	5·00	" " " " "
Vallo N.5 Dusting Compound	"	5·00	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Pesto Tobacco Dust	"	·65	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Pinnacle	"	1·50	" " " " "
Arsenical Dusting Powders.		%	
Nictar No. 8	Arsenic Pentoxide (As_2O_5)	15·50	P. Alkemade and Sons, 535 Little Lonsdale-street, Melbourne
Plane "A.P." No. 1	" " "	6·20	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
" "A.P." No. 25	" " "	7·75	" " " " "
" "A.P." No. 33	" " "	10·20	" " " " "
" "A.P." No. 50	" " "	15·50	" " " " "
Ramtre No. 17	" " "	8·00	Ramsay and Treganowan Ltd., 469-477 Latrobe-street, Melbourne
" No. 19	" " "	16·00	" " " " "
Vallo "A.L." 30	" " "	9·60	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
" "A.L." 50	" " "	16·00	" " " " "
Pannifex Lead Arsenate No. 5	" " "	6·20	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
" " " No. 6	" " "	7·75	" " " " "
" " " No. 7	" " "	10·20	" " " " "
" " " No. 8	" " "	15·50	" " " " "
Miscellaneous Dusting Powders.		%	
Nictar No. 10	Copper (Cu)	8·75	P. Alkemade and Sons, 535 Little Lonsdale-street, Melbourne
Plane Coppodust	"	8·75	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
Ramtre No. 14	"	8·00	Ramsay and Treganowan Ltd., 469-477 Latrobe-street, Melbourne
Arresto	Sulphur	9·00	Law Somner Pty. Ltd., 21-23 Elizabeth-street, Melbourne
	Anhydrous Ferrous Sulphate	9·00	
	Arsenic Pentoxide	·40	
Tip Top Grubbo	Hellebore	1·30	" " " " "
	Nicotine	·10	
	Slaked Lime	75·00	
Pannifex Copper Dust No. 9	Copper (Cu)	8·75	Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Cooper's Katakilla	Rotenone and Allied Substances	3·00	Ramsay and Treganowan Ltd., 475 Latrobe-street, Melbourne
" Drymac	" " "	1·00	" " " " "
" " Extra Light	" " "	2·00	" " " " "
Banexo	Tar Oil	5·60	D. Walker, Waverly Lime Works, Lara
Nictar No. 1	Nicotine	2·50	P. Alkemade and Sons, 535 Little Lonsdale-street, Melbourne
	Refined Creosote	5·00	
Plane Nicosote No. 1	Nicotine	1·00	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
	Tar Oil	4·00	
" " No. 2	Nicotine	2·50	" " " " "
	Tar Oil	4·00	
Derridust No. 1	Tuba Toxin	2·00	Houghton and Byrne Pty. Ltd., 268 Flinders-street, Melbourne
" No. 2	Tuba Toxin	2·00	" " " " "
	Pyrethrin	·10	
	Sulphur	39·00	

LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).				Manufacturer or Wholesale Dealer.
	Nicotine.	Arsenic Pentoxide (As_2O_5).	Copper (Cu).	Sulphur.	
	%	%	%	%	
Elephant Duston No. 2	1·2	5·00	..	..	Jaques Pty. Ltd., 31 Queen-street, Melbourne.
Nictar No. 3	2·0	15·50	..	..	P. Alkemade and Sons, 535 Little Lonsdale-street, Melbourne
„ No. 5	2·0	7·75	..	..	„ „ „ „
Plane "A.P." No. 25N	2·0	7·75	..	..	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
„ "A.P." No. 50N	2·0	15·50	..	..	„ „ „ „ „
„ "A.P." No. 25NN	3·0	7·75	..	..	„ „ „ „ „
„ "A.P." No. 50NN	3·0	15·50	..	..	„ „ „ „ „
Ramtre No. 9	2·0	8·00	..	..	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
„ No. 52	2·0	16·00	..	..	„ „ „ „
Vallo "A.L.N."	2·0	8·00	..	..	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Ramtre No. 45	2·0	..	..	40·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Plane "A.P." No. 2	..	4·65	..	75·0	N. N. McLean Pty. Ltd., 395 Queen-street, Melbourne
„ "A.P." No. 3	..	4·65	3·00	40·0	„ „ „ „ „
„ Seed Bed	2·0	7·75	4·00	..	„ „ „ „ „
„ Coppodust with Lead Arsenate ..	..	7·75	8·75	..	„ „ „ „ „
„ Azurine No. 1	..	..	4·00	50·0	„ „ „ „ „
„ „ No. 2	..	..	7·00	40·0	„ „ „ „ „
„ „ No. 4	..	..	11·00	35·0	„ „ „ „ „
„ „ with Lead Arsenate ..	..	6·20	7·00	40·0	„ „ „ „ „
„ Tomato No. 1	..	15·50	4·00	40·0	„ „ „ „ „
„ „ No. 2	..	7·75	4·00	40·0	„ „ „ „ „
„ „ No. 3	..	15·50	..	40·0	„ „ „ „ „
Ramtre No. 21	..	6·00	6·00	30·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Vallo Tomato and Vegetable No. 1 ..	..	16·00	5·00	40·0	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
„ „ „ „ No. 2 ..	..	8·00	5·00	40·0	„ „ „ „ „
„ A.L.B.N."	1·2	8·00	3·20	..	„ „ „ „ „
„ "A.L.B."	..	8·00	3·20	..	„ „ „ „ „
Pannifex Dual Control No. 10	2·0	4·65	..	..	H. C. Pannifex and Co., Pty. Ltd., 4 Dudley-street, Melbourne
„ „ „ No. 11	2·0	6·20	..	..	„ „ „ „ „
„ „ „ No. 12	2·0	7·75	..	..	„ „ „ „ „
„ „ „ No. 13	2·0	9·30	..	..	„ „ „ „ „
„ „ „ No. 14	2·0	15·50	..	..	„ „ „ „ „
„ „ „ No. 15	3·0	7·75	..	..	„ „ „ „ „
„ „ „ No. 16	3·0	9·30	..	..	„ „ „ „ „
„ „ „ No. 17	3·0	15·50	..	..	„ „ „ „ „
„ „ „ No. 18	..	4·65	..	75·0	„ „ „ „ „
„ „ „ No. 19	..	4·65	3·0	40·0	„ „ „ „ „
„ Seed Bed Dust, No. 20	2·0	7·75	4·0	..	„ „ „ „ „
„ Copper and Sulphur, No. 21 ..	..	..	4·0	50·0	„ „ „ „ „
„ „ „ No. 22 ..	..	..	7·0	40·0	„ „ „ „ „
„ „ „ No. 23 ..	..	..	11·0	35·0	„ „ „ „ „
„ „ „ No. 24 ..	..	6·20	7·0	40·0	„ „ „ „ „
„ Tomato, No. 25	..	15·50	4·0	40·0	„ „ „ „ „
„ „ No. 26	..	7·75	4·0	40·0	„ „ „ „ „
„ „ No. 27	..	15·50	..	40·0	„ „ „ „ „
„ Copper, plus L.A., No. 28 ..	..	7·75	8·75	..	„ „ „ „ „
„ Peamite, No. 29	1·0	..	..	4·0 (Tar Oil)	„ „ „ „ „
„ Afisdust, No. 30	2·5	..	..	4·0 (Tar Oil)	„ „ „ „ „
Ramtre Dust No. 13	..	..	5·0	25·0	Ramsay and Treganowan Ltd., 475 Latrobe-street, Melbourne
Vallo N/AL 5–50	5·0	16·0	..	..	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
„ „ 3–30	3·0	9·6	..	..	„ „ „ „ „

Blowfly Preparations.			
		%	
Allkon Blowfly Oil	Arsenic (As_2O_5)	1·43	Allkon Pty. Ltd., 34 Queen-street, Melbourne
	Cresol	14·00	
	Phenol	1·00	
	Tar Oils	20·00	
	Eucalyptus Oil	10·00	
	Mineral Oil	30·00	
Bio-Fli-Di	Naphthalene	7·50	The Nightingale Supply Co. Ltd., Ingle-street, Port Melbourne
	Benzol	13·70	
	Sulphur	·80	
	Cresylic Acid	8·40	
Cresco Blowfly Repellent and Healer	Glycerides of Boric Acid ..	65·00	Cresco Fertilisers Ltd., Geelong
	Methylated Ethyl Alcohol ..	35·00	

LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Fungicide and/or Insecticide.	Percentage of Declared Active Constituent(s).	Manufacturer or Wholesale Dealer.
Blowfly Preparations—continued.		
Defiance Blowfly Oil	Petroleum Oils .. .. 83·00 Coal Tar Derivatives .. 14·00 Essential Oils .. .. 3·00	The Shell Co. of Australia Ltd., 163 William-street, Melbourne
Immunol Blowfly Dressing	Arsenic (As_2O_3) .. .. 1·43 Cresol .. .. .. 14·00 Phenol .. .. .. 1·00 Tar Oils .. .. .. 20·00 Eucalyptus Oil .. .. 10·00 Mineral Oil .. .. 30·00	Hart and Co. Pty. Ltd., 84 Whiteman-street, South Melbourne
Way-bio	Eucalyptus Oil .. .. 16·00 Aldehydes .. .. 13·00 Terpenes .. .. 55·00 Ketones .. .. 16·00	W. K. Burnside Pty. Ltd., 34–44 Jeffcott-street, Melbourne
Woolio	Neutral Tar Oil .. .. 80·00	The Australian Estates Co. Ltd., 114–116 William-street, Melbourne
Welco	Vegetable Distillation Residue 20·00 Mineral Oil .. .. 80·00	Welch, Perrin and Co. Pty. Ltd., 48–56 Queen's Bridge-street, South Melbourne
Miscellaneous Pest Destroyers.	%	
Vallo Arsenate of Soda (for treatment of hides)	Arsenic Pentoxide (As_2O_5) .. 63·00	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Cresco Itch Fluid	Cresols and Phenol .. 40·00 Glycerol .. .. .. 8·50 Sulphur (as Sulphide) .. 14·70	Cresco Fertilisers Ltd., Geelong
Younghusband's Weevil Killer	Arsenic Pentoxide (As_2O_5) .. 63·00	Younghusband Ltd., 94–96 King-street, Melbourne
Alkon Special Antiseptic	Cresol .. .. .. 44·00 Sulphur .. .. .. 8·60	Alkon Pty. Ltd., 34 Queen-street, Melbourne
Immunol Sulphur Antiseptic	Cresol .. .. .. 44·00 Sulphur .. .. .. 8·60	Hart and Co. Pty. Ltd., 84 Whiteman-street, South Melbourne
Weevil Compound	Arsenic (As_2O_3) .. .. 50·00	F. H. Faulding and Co. Ltd., 123–125 Lonsdale-street, Melbourne

Distinguishing Name of Vermin Destroyer (Sheep Dip).	Percentage of Declared Active Constituent(s).	Manufacturer or Wholesale Dealer.
Sheep and Cattle Dips (Arsenical).		
Cooper's Powder	Conforms with standard	New Zealand Loan and Mercantile Agency Co. Ltd., 538 Collins-street, Melbourne
Cresco Fluid	" " "	Cresco Fertilisers Ltd., Geelong
Edward's Powder	" " "	Primary Producers Chemicals Pty. Ltd., 430 Little Collins-street, Melbourne
Little's Powder	" " "	Wilcox Mofflin Ltd., 499 Little Collins-street, Melbourne
Quibell's Powder	" " "	Dalgety and Co. Ltd., 461–471 Bourke-street, Melbourne
Vacdip	" " "	Vacuum Oil Co. Pty. Ltd., 29 Market-street, Melbourne
Sickle Powder	" " "	Commonwealth Fertilisers and Chemicals Ltd., 65 William-street, Melbourne
Thomas' Carbolised	" " "	The Thomas Sheep and Cattle Dips Pty. Ltd. 47 Adam-street, Burnley
Vallo	" " "	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Atlantic	" " "	Atlantic Union Oil Co. Ltd., 396 Collins-street, Melbourne
Little's Tripolvos Powder	" " "	Wilcox Mofflin Ltd., Henty House, 499 Little Collins-street, Melbourne
Lan-o-leen	" " "	The Graziers' Co-op. Shearing Co. Ltd., 90–92 William-street, Melbourne
Young's Powder	" " "	Strachan and Co. Ltd., Geelong
" Jason Liquid	" " "	" " "
Osmond's Viper Powder	" " "	Osmond and Son (Aust.) Ltd., 35 William-street, Melbourne
United	" " "	The Australian Estates Co. Ltd., 114–116 William-street, Melbourne
Dinkum Fluid	" " "	Dytic Products Pty. Ltd., 4 Roden-street, Melbourne
Dytic Powder	" " "	" " " " "
Dytic Fluid	" " "	" " " " "
Vetsol	" " "	A. H. McDonald & Co. Pty. Ltd., 570 Bridge-road, Richmond
Miscellaneous Dips.	%	
Alkon	Arsenic (As_2O_3) .. 41·80 Sulphur as Sulphide .. 1·40 Derris Ext. (Crude) .. 4·60	Alkon Pty. Ltd., 34 Queen-street, Melbourne
Cooper's Quickacting Powder	Arsenic (As_2O_3) .. 22·00 Rotenone and allied substances .. ·70	New Zealand Loan and Mercantile Agency Co. Ltd., 538 Collins-street, Melbourne
" Milk Oil Fluid	Phenol and Cresol .. 18·00	" " " " "

LIST OF FUNGICIDES, ETC., ETC.—*continued.*

Distinguishing Name of Vermin Destroyer (Sheep Dip).	Percentage of Declared Active Constituent(s).	Manufacturer or Wholesale Dealer.
Miscellaneous Dips—continued.		
Hart's Immunol Fluid	Arsenic (As_2O_3) 20·00 Cresol 32·00	Hart and Co. Pty. Ltd., 84 Whiteman-street, South Melbourne
" " Super	Arsenic (As_2O_3) 22·40 Cresol 30·70	" " " " "
Kymac	Oleo-resin (Derris) ·74 Cresols 58·00 Rotenone and allied substances 1·34	Younghusband Ltd., 94–96 King-street, Melbourne
Little's Liquid	Arsenic (As_2O_3) 12·20 Tar Acids 13·00	Wilcox Mofflin Ltd., 499 Little Collins-street, Melbourne
" "	" " 19·00	" " " " "
Quibell's Liquid	" " 18·00	Dalgety and Co. Ltd., 461–471 Bourke-street, Melbourne
Vallo Fluid	Tar Acids 18·00	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
Young's Red Label Paste	Phenols 24·00 Tuba-toxins, &c. 19·50	Strachan and Co. Ltd., Geelong
Osmond's Viper Fluid	Arsenic (As_2O_3) 15·00 Phenols 18·00	Osmond and Son (Aust.) Ltd., 35 William-street, Melbourne
Edward's Improved Fluid	Tar Acids 18·00	Primary Producers' Chemicals Pty. Ltd., 430 Little Collins-street, Melbourne
Sickle Double Action	Arsenic (As_2O_3) 21·00 Rotenone, &c. ·70	Commonwealth Fertilisers and Chemicals Ltd., 65 William-street, Melbourne
Hart's Immunol Paste	Arsenic (As_2O_3) 41·80 Sulphur 1·40 Derris Ext. 4·60 Cresols 58·00	Hart and Co. Pty. Ltd., 84 Whiteman-street, South Melbourne
Kymac	Rotenone and allied substances 1·34	Elder Smith and Co. Ltd., Geelong
Cooper's Pulvex	Rotenone and allied substances 2·50	New Zealand Loan and Mercantile Agency Co. Ltd., 538 Collins-street, Melbourne
Quibell's Special Powder	Arsenic (As_2O_3) 21·60 Rotenone and allied substances ·70	Dalgety and Co. Ltd., 461–471 Bourke-street, Melbourne
Little's Supreme Powder	Arsenic (As_2O_3) 19·50 Rotenone and allied substances ·70	Wilcox Mofflin Ltd., 499 Little Collins-street, Melbourne

Distinguishing Name of Weed Destroyer.	Percentage of Declared Active Ingredients.	Manufacturer or Wholesale Dealer.
	%	
Weed Destroyers (Non-poisonous).		
Cresco Sodium Chlorate	Sodium Chlorate 98·0	Cresco Fertilisers Ltd., Geelong
Felton, Grimwade, and Duerdin's Sodium Chlorate	" " 99·0	Felton, Grimwade, and Duerdins Ltd., 342–6 Flinders-lane, Melbourne
X.L. Sodium Chlorate	" " 99·5	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Weedex 23%	Calcium Chlorate 23·0 " Chloride 70·0	Industrial Chemicals Pty. Ltd., 380 Collins-street, Melbourne
Weedex 35%	Chlorates of Calcium and Sodium 35·0	" " " " "
Faulding's	Chloride of Calcium 60·0 Sodium Chlorate 99·0	F. H. Faulding and Co. Ltd., 123–25 Lonsdale-street, Melbourne
Pannifex 16/16 Lawn, No. 32	Ammonia 16·0 Potash 16·0	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
I.C.I. Sodium Chlorate	Sodium Chlorate 98·0	Imperial Chemical Industries of Aust. and N.Z. Ltd., 376-380 Collins-street, Melbourne
Atlacide	Chlorate (ClO_3) 44·85 Chloride (Cl) 19·15 Calcium 10·42 Sodium 12·46	" " " "
Weed Destroyers (Poisonous).	%	
Pinnacle	Arsenic (As_4) 60·6	Avery's Garden Insecticide Co., 67 Burnley-street, Richmond
Bell's Dandy Blue Weed Killer	" " 55·0	Rocke, Tompsitt, and Co. Pty. Ltd., 292–298 Flinders-street, Melbourne
Cooper's Weedicide*	" " 27·0	Ramsay and Treganowan Ltd., 469–477 Latrobe-street, Melbourne
Edwards*	" " 20·0	Primary Producers Chemicals Pty. Ltd., 430 Little Collins-street, Melbourne
Elephant Globe	" " 60·6	Jaques Pty. Ltd., 31 Queen-street, Melbourne
	" " 59·0	Rocke, Tompsitt, and Co. Pty. Ltd., 292–298 Flinders-street, Melbourne
" Weed and Scrub*	" " 21·0	" " " "
Vallo Weed, Scrub, and Tree	" " 60·6	Victor Leggo and Farmers Ltd., 222 Queen-street, Melbourne
" Arzeen	" " 60·6	" " " " "
" Liquid Arzeen*	" " 36·3	" " " " "
" Pentoxide*	" " 23·5	" " " " "
Hardy's Weed Killer*	" " 20·0	Hardy's Weed Killer Pty. Ltd., 422 Collins-street, Melbourne
Pannifex Arsenical, No. 33	" " 20·0	H. C. Pannifex and Co. Pty. Ltd., 4 Dudley-street, Melbourne
Tip Top	" " 60·6	Law Somner Pty. Ltd., 21–23 Elizabeth-street, Melbourne

* In liquid form.

Corky Scab in Otway

Minister's Successful Measures at Eradication

On the 28th and 29th March the "Age" published articles criticizing the Department of Agriculture and the Minister of Agriculture (Mr. Hogan) regarding the efforts to clean up corky scab which had made its appearance on some farms at Beech Forest and to prevent the disease spreading to clean farms in that district and to districts in the western part of the State. On the 13th May the "Age" published the following refutation of these articles :—

RAPID headway is being made by the Department of Agriculture, under the direction of the Minister of Agriculture (Mr. Hogan), in eradicating corky or powdery scab from those portions of the Beech Forest pototato-growing area in which the discovery of this disease in June, 1936, caused so much concern to the producers and to the Minister. This desirable progress is strikingly emphasized in official statistics which reveal that whereas two years ago corky scab was found on the farms of 28 growers, affecting 222 acres, there were on 23rd April last only four farms and 43 acres affected. At this rate the district may be expected to be pronounced "clean" and "free from corky scab" at no distant date. This excellent result is due mainly to the firm but obviously essential and practical measures prescribed by the Minister in the interests of the potato-growing industry, to control the disease and to prevent its spread to other areas in Victoria.

Because these really "outback" and fighting settlers had already suffered long and serious handicaps, the *Age*, at the inception of the outbreak in 1936, felt impelled to interest itself in their welfare and to press that in the exceptional circumstances the growers should be assisted in every possible way. This district, now regarded as one of the finest potato-growing areas in Australia, was the scene of one of Victoria's settlement tragedies some years ago. By dogged perseverance, encouraged by the provision of modern facilities for marketing their products, the people of the Otway saw a new era dawn for them—they were getting on their feet. They had contributed materially to the rehabilitation of the Otway. But in June, 1936, corky scab was discovered in about one-third of the potato fields, thus giving them another setback. It is good to see them again emerging successfully. But unfortunately in the course of the more recent campaign on behalf of the Beech Forest potato-growers some entirely wrong information was conveyed to this office, and upon this rather severe criticism of the Minister of Agriculture was based as recently as 28th and 29th March this year. It is now clear from a perusal of official documents that the Minister of Agriculture, no doubt inspired by his practical knowledge of the potato-growing industry and experience of farmers' difficulties, went to considerable lengths to aid the Beech Forest potato-growers in their unfortunate predicament. In fairness to Mr. Hogan producers should know the facts.

The Superintendent of Horticulture, in a memorandum dated 11th May, stated that a careful search of the files had failed to disclose any record of "a request to the Minister by the Beech Forest and Otway District Produce Society for another inspection of the affected farms by the officials of the department" having been refused, as had been stated. This officer added, "As a matter of fact, inspections have been continually carried out in the Beech Forest areas affected with corky scab during 1936, 1937, and the present year."

Another statement made was that "Mr. Hogan, as Minister of Agriculture, has deprived a number of farmers in the Beech Forest and Otway district of their former means of livelihood, and apparently intends to continue the embargo; an autocratic refusal to do anything but point to the regulations—which may be obsolete—is an offence to the democratic spirit of the community." It was stated also that originally crops to the value of more than £7,000 were seized, although traces of the disease were found in only .02 per cent. of the total crop, or potatoes valued at £15, and that a ban had been placed on potatoes being planted on infected areas for five years. It is clear that the Minister and his officers administered the Act sympathetically, and were at pains to so deal with the situation as to cause a minimum of loss and

inconvenience consistent with clearing up the outbreak as speedily as possible. The use of the word "seized" was unfortunate and misleading.

On 4th April the Minister in a statement explained that the Department had arranged for growers whose potatoes were affected to sell their clean potatoes to Government institutions, where the peelings could be incinerated. In 1936, 372 tons of Beech Forest potatoes were sold to Government institutions for £5 8s. 6d. a ton, the price at which tenderers had offered to supply the institutions. Small potatoes from the affected areas were not allowed to be sold for seed and used in clean districts for obvious reasons. With regard to the suggestion that no compensation had been paid, the Minister, through his officers, advised (not instructed) the growers concerned that it would materially assist the eradication of the disease if the infected section of the farm was not planted with potatoes for a period. Clean farms were not interfered with for the embargo only applied to infected farms. It was further suggested that these areas be sown down with pastures, in which case the Department would provide the seed and manure, and its experts would give any advice desired as to treatment and feeding off. This offer was conveyed to each grower by circular, and a large percentage availed themselves of it. The results obtained are best indicated in the following table:—

	1935-36.	1936-37.	1937-38.
Number of growers in district	71	79	71
Estimated total acreage sown to potatoes in district	700	460	378
Number of growers with infected crops ..	28	25	4*
Total acreage infected with corky scab ..	222	156½	43*
Number of growers supplied with seed and super.	21	19	—
Acres sown down ..	147	136½	—
Expenditure on seed and super. supplied free by Department ..	£211	£227	—
Cost per acre	£1 8s. 8d.	£1 13s. 5d.	—

*To 23rd April, 1938.

This table also emphasizes the important fact that a little more than one-third of the Beech Forest area was originally infected, and that a large number of farms have always been clean.

Rochester Irrigated Pasture Competition *(continued from page 274).*

SCHOOL PLOTS.—DETAILS OF THE AWARD.

School.	Paths.	Labelling.	Species.	Condition.	Weeds.	Total.	Grand Total.
	(20)	(20)	(20)	(20)	(20)	(100)	(200)
Nanneella Estate	19	17	19	19	19	93	189
	20	18	19	19	20	96	
Ballendella	18	19	17	18	19	91	185
	19	19	18	19	19	94	
Nanneella West	18	17	17	16	18	86	179
	19	18	18	19	19	93	
Strathallan	18	18	18	18	19	91	174
	17	16	17	16	17	83	

NOTE—In each case the results of the spring inspection are given first.

some extent the school at Strathallan is handicapped by being outside the irrigation area and by the rather intractable nature of the soil present.

The practice of cutting the plants at the pasture stage instead of allowing them to reach maturity is to be commended since it maintains the plants in a freshly-growing condition. The comparison of strains of the same species also made an interesting study. In this respect it is suggested that a comparison of the early, mid-season and late flowering strains of subterranean clover would be profitable. One box would be sufficient to carry out such a test, as a few plants of each strain would suffice. Records of dates of flowering could be kept. These dates suggest the conditions under which each strain would prove of most value.

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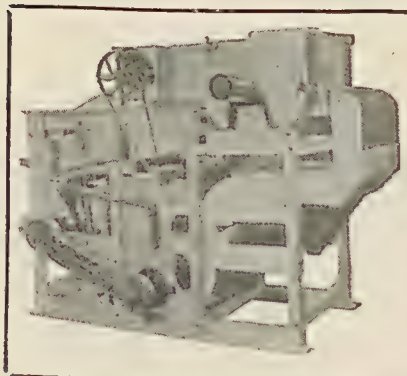

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By J. L. Provan, B.Agr.Sc., Senior Horticultural Instructor.

The Orchard.

DURING June the grower of deciduous fruits will be concentrating his attention on the pruning of trees and the application of dormant sprays for the control of insect pests and fungus diseases. San José scale, which can rapidly become a serious menace, is most conveniently controlled by a combined spray of 2 gallons of winter white oil, and 5 gallons of lime sulphur made up to 80 gallons with water, a straight lime sulphur spray of 1 gallon in 10 gallons, or a red oil spray 1 in 14. If the infestation is heavy, two applications may be necessary. These sprays will effectively control red spider and bryobia mite also, and the lime sulphur sprays in addition will prove a satisfactory control for the pear leaf blister mite which appeared in some orchards last season.

The green peach aphid and cherry aphid should be attacked during the last week in June when the eggs around the buds and in crevices can be destroyed by a 3 per cent. tar distillate spray. If thoroughly applied at the correct time, this is a particularly efficient ovicidal spray.

All phases of orchard sanitation should receive attention. Chemical and hessian bands which were placed on apple and pear tree trunks for codling moth control should have been removed and destroyed by now; props, poles, loose bark on trunks and limbs, debris around tree trunks all will require attention, and hibernating larvae should be destroyed, and possible cover for next season's broods removed.

To assist in the control of brown rot of apricots and peaches, all mummified fruits should be collected and burned, and diseased twigs and spurs should be pruned out. The soil around the base of the tree should be well cultivated, particularly those small strips between the trees.

Growers who expect to rework unprofitable and obsolete varieties of fruit trees in the spring should collect suitable scion wood during the pruning season. Thin, one-year-old laterals of well matured wood are preferred for this operation. Each variety should be tied in bundles, and the base of each bundle should be heeled into moist soil in a shady place. If necessary, these scions can be transferred from

this shelter, and placed in cool store with the approach of spring. Scions required for grafting on to other varieties for the purpose of providing cross pollination should also be collected, and growers are urged to consider the working of several such pollinators on each tree. Even with varieties of fruit which are normally self-fertile and self-fruitful, the provision of cross pollination results in increased yields, and in some cases in better quality fruit. Experiments conducted in New South Wales with the Williams pear, which in Victoria is normally self-fruitful, showed distinct advantages when cross pollination was provided. The fruit was of better size, shape, and quality, and better hanging ability on the tree was obtained.

The winter months are particularly suitable for planting windbreaks around orchards. In southern districts, *Pinus insignis* and the common cyprus have been the most popular trees for shelter belts, but, in northern districts, the sugar gum and mahogany gum, and Boobyalla grow quickly, and provide good shelter. Evergreen trees should be chosen for windbreaks because of the shelter they afford in the early spring when cold wet weather may cause damage to the blossoming trees.

Citrus growers in frosty areas should consider the provision of orchard heating apparatus if frosts are severe enough to injure the fruit and trees. Two forms of orchard heating are available, the solid fuel (briquette) type of heater, and the oil heater. In citrus groves the former should be preferred because of the clean heat. Sooty deposits from oil burning heaters are a disadvantage on the light-coloured citrus fruits. Apricot growers who have experienced losses of crop due to early spring frosts occurring at the blossoming period are advised to consider orchard heating as an insurance against losses of this kind. In some districts growers have been astounded at the benefits obtained from orchard heating at this critical period. Another factor which will assist trees to withstand frost injury is the provision of ample soil moisture. The continued dry weather may result not only in severe frosts later in the season, but also in a very dry soil. The examination of the soil would disclose whether a winter irrigation is necessary, and for early blossoming trees, particularly almonds, a winter irrigation would be very beneficial if the soil is dry.

Growers who still have supplies of pears in cool store should remember that the storage life of the pear is limited. If the variety is removed from cool storage before the termination of its storage life, the pear will ripen with the development of full flavour and lusciousness. If its cool storage period is prolonged beyond its storage life, then the pear will fail to ripen normally after removal from the store. If only slightly over-stored, the pears will develop a mealy character instead of juiciness. If over-stored for a longer period the pears develop a grey discolouration around the core region, and if still further over-stored, scald will develop. At 32° Fahr. the storage life of the main varieties has been determined as follows:—Williams, 3 months; Howell and B. Bosc., 3½ months; Packham's and d'Anjou, 4½ months; Winter Cole and Josephine, 5½ months; and Winter Nelis, 6 months.

The Flower Garden

By A. W. Jessep, M.Agr.Sc., B.Sc., Dip.Ed., Principal, School of Horticulture, Burnley.

June is the month for cleaning up in the garden. The autumn flowering plants have died down, and the dahlias are ready for lifting. The dahlia tops should be cut off about 6 inches above the ground, and in a few days the tubers lifted and stored in a sheltered position. It is better when lifting to allow the soil to remain around them. An ideal place for storing is under a tree or hedge—this position being much better than in a shed. When stored in a shed tubers become too dry, and some will be destroyed.

Borders should be dug over, and if the dry summer has caused any casualties, this is the time for replacement. Deciduous autumn foliaged plants were discussed in last month's Journal. Pruning back of many shrubs is carried out during the winter, but those that flower only in the spring should not be cut until after flowering, e.g., the flowering plums are cut immediately they finish flowering, and *not* in winter.

Roses, generally speaking, are pruned during the winter, June and July being the best

Pruning the standard rose. Left, unpruned; right, the same bush after pruning.

months. In areas where the frosts are late, prune late, and where they are early, prune early. Early pruning starts a plant into early growth, and this must be avoided in late districts, or the young shoots may be destroyed. The objects of rose pruning are to develop a symmetrical shape, to prolong the useful life of the plant, and to enable it to produce more and better blooms. If roses are not pruned they tend to grow untidy, and gradually the limbs elongate and become bare at the base, producing flowers high up on the plant. If you do not understand rose pruning, try to obtain the services of some one who does, or attend practical demonstrations on the subject. It is preferable to be able to carry out your own pruning, for although the general principles are the same, each rose needs slightly different treatment.

The general principles of rose pruning consist of:—(1) Removing old wood and encouraging young healthy strong growth; (2) cutting out all dead, unhealthy, or weak growths; (3) removing any branches growing across the centre of the bush, thus allowing the light and sunshine to penetrate, and (4) shortening back the remaining strong, healthy growth to a suitable distance. When pruning always cut just above a bud, and at a slope that will enable the moisture to run off, and the cut to heal more quickly. Instead of completely removing some of the branches, the majority of amateurs merely cut them back. It must be remembered that every bud on the branch has the power to produce outgrowths at the apex of which a flower is produced. Therefore leave only a sufficient number of buds to enable the plant to produce flowers of a reasonable quality.

Roses are classified into several groups, and each type requires slightly different treatment. The standard roses usually require to be pruned more heavily than the bush type of the same variety. Exceptions to winter pruning include the more or less evergreen type such as Lorraine Lee, which should be pruned during the summer, as it produces flowers right through the late autumn and winter months. These flowers are greatly prized at that time of the year. In addition, the climbing, clustered, or Wichuriana roses flower in the spring only. They should not be pruned in winter, but immediately they finish flowering. The ordinary flowering types such as Black Boy and Climbing Ophelia are pruned in winter because they flower both in the spring and autumn months. Some roses will not withstand drastic pruning. If a close study of their growth is made from year to year the grower will discover the characteristics of these roses.

Next month is a suitable time to plant roses. There are many good varieties available, and,

when selecting, make sure that the rose is a good grower under the conditions in which you intend growing it. The following roses are good growers under average conditions:—

Reds.—Etoile de Hollande, Hadley, Chateau de Clos Bougeot.

Pinks.—Dame Edith Helen, Lorraine Lee, Butterfly.

Yellows.—Golden Emblem, Golden Dawn, Lady Hillingdon.

Coppery Tinted.—Shot Silk, Madam Herriot, Angele Pernet.

White.—Mrs. Herbert Stevens, McGredy's Ivory.

Climbers.—Black Boy, Paul's Scarlet, Climbing Ophelia.

Wichurianas (Pillar).—Bushfire, American Pillar, Lady Gay.

Polyantha (Dwarf).—Ellen Poulsen, Rufus, Orleans.

Vegetables.

The late tomatoes, beans, pumpkins, and melons, whose growth has been completely destroyed by the frosts should be removed, and the areas should be given a thorough clean up. The beds require an airing in preparation for spring sowing. Each year, trench a portion of the vegetable garden, to be used for the deeper rooted vegetables. The usual method adopted is to half trench the area as follows:—

Remove the first spit of about 18 inches wide to a depth of 15 to 18 inches according to the type of soil, and put it to one side to be used in filling up the last trench of the area. The subsoil is then dug up to a depth of the spade, and left at the bottom of the trench. The top portion of the next spit, which is about 18 inches wide, is used to fill in the previous one, and then the subsoil of this spit treated as indicated above. This process is continued until the subsoil of the last spit is dug up, the surface soil from the first spit being used to fill up this last trench. A good dressing of lime is usually mixed with the subsoil at the rate of about a quarter of a pound per yard of trench.

The remainder of the garden which is not required for immediate planting should be dug and left in the rough. If necessary, add lime to the surface at the rate of a quarter of a pound per square yard. At present it is not too late to plant rhubarb and asparagus crowns, and further sowings of broad beans, peas, and spinach may be made.

June is a good month for the planting of culinary herbs. The average household requires a few only of each of the main ones, and with the exception of parsley they are all perennial in habit. They may be grown from seed, but the best idea is to procure rooted portions of the perennial forms. Herbs that have been freshly picked from the garden are preferable to those which have been dried. Every householder should have a few roots of each of the following herbs, even if he or she does not make a practice of vegetable growing.

Mint.—This requires a moist position. As it is inclined to spread and become a nuisance, it is best grown in a kerosene tin, or in some confined area.

Thyme.—In addition to its value as a culinary herb, thyme makes a good edging plant for the vegetable garden.

Sage and Marjoram are also easily grown, and may be used for seasoning, particularly with the more fatty meats.

Parsley is grown from seed, and if a few seeds are sown in autumn and spring, there should be a plentiful supply of parsley throughout the year. For further particulars in regard to the cultivation of herbs, apply to the Director, Department of Agriculture, Melbourne, C.2, for a free pamphlet on the subject.

Viticultural Notes

By D. G. Quinn, Viticulturist.

As pruning operations will begin shortly, applications for grafted or ungrafted Phylloxera-resistant rootlings for delivery in 1939 should now be forwarded to the Manager, Viticultural Station, Rutherglen. These vines are available for distribution within the proclaimed North Central and Geelong vine disease areas, and cannot be sent to growers in clean districts. The prices per 1,000 are—grafted rootlings £20, ungrafted rootlings £5, cuttings £2 10s., with a surcharge of 25 per cent. for lots under 500. It should be noted that it is a legal offence for any person to forward grape vines from a proclaimed vine disease district into a clean area, or from any part of Victoria into South Australia.

Standard Herd Records

For Quarter ended 31st March, 1938

In the following is set out the records of all cows which completed a lactation during the quarter. The number is 236, of which 168 qualified for the certificate. The figure in brackets after the owner's name shows the number of entries.

The amount of butter-fat required for qualification varies with the age class to which the animal belongs, the standard being as follow:—

Junior 2 year old (under 2½ years at time of calving)	230 lb. butter fat.
Senior 2 year old (between 2½ and 3 years at time of calving)	250 lb. butter fat.
Junior 3 year old (between 3 and 3½ years at time of calving)	270 lb. butter fat.
Senior 3 year old (between 3½ and 4 years at time of calving)	290 lb. butter fat.
Junior 4 year old (between 4 and 4½ years at time of calving)	310 lb. butter fat.
Senior 4 year old (between 4½ and 5 years at time of calving)	330 lb. butter fat.
Mature cow 5 years and over	350 lb. butter fat.

(Except where otherwise stated, the period of test was 273 days.)

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk. lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.		Sire.
Atkinson, W. K., Swan Hill, Dairy Shorthorn (6).											
Willow Park Blush 8th	D.S.H.B.	8.6.37	22	7,850	4·03	319·94	230	Jr. 2	..	..	Wicklesham Lord Barrington 5th (Imp.)
Willow Park Camelia 12th	D.S.H.B.	5.6.37	21	8,293	3·99	331·48	270	Jr. 3	..	..	Willow Park Silvermine 4th
Willow Park Countess 17th	D.S.H.B.	8.6.37	25	8,714	3·68	320·97	250	Sr. 2	..	..	Wicklesham Lord Barrington 5th (Imp.)
Willow Park Fairy 9th	D.S.H.B.	25.5.37	19	7,484	3·44	257·23	250	Sr. 2	..	..	Wicklesham Lord Barrington 5th (Imp.)
Willow Park Melba 24th	D.S.H.B.	22.5.37	21	7,569	3·65	276·63	230	Jr. 2	..	..	Wicklesham Lord Barrington 5th (Imp.)
Willow Park Moss Rose 10th	D.S.H.B.	19.5.37	21	8,219	3·72	305·46	250	Sr. 2	..	..	Willow Park Lustre 3rd
Austin, F., Lara, Jersey (11).											
Avalon Madeira's Duchess	56188	30.4.37	19½	6,401	5·60	358·45	230	Jr. 2	..	..	Mornmoot Prince Madeira
Avalon Mercedes 16ths Queen	36827	6.6.37	19½	6,941	6·92	480·56	350	Mature	354, 445, 517 476		Avalon Mercedes Chief 16th
Avalon Noble's Duchess 3rd	47058	11.5.37	16	5,568	5·97	332·19	290	Sr. 3	246	..	Noble of Avalon
Avalon Noble's Pansy 9th	47059	24.5.37	20	6,128	5·85	358·69	350	Mature	328, 398	..	Noble of Avalon
Avalon Starbright's Duchess	47062	10.6.37	23	8,216	6·44	529·21	330	Sr. 4	429, 499	..	Brucevale Lord Starbright 3rd
Avalon Starbright's Pansy	47063	2.5.37	12½	6,563	5·46	358·65	310	Jr. 4	291	..	Brucevale Lord Starbright 3rd
Avalon Starbright's Pansy 2nd	51562	28.4.37	13	4,994	6·37	318·00	250	Sr. 2	..	..	Brucevale Lord Starbright 3rd
Avalon Starbright's Pansy 3rd	51563	12.5.37	19	6,144	5·86	359·98	250	Sr. 2	..	..	Brucevale Lord Starbright 3rd
Avalon Starbright's Pansy 4th	56189	27.4.37	19	5,966	5·71	340·71	230	Jr. 2	..	..	Brucevale Lord Starbright 3rd
Avalon Starbright's Pansy 5th	56190	11.5.37	15	6,322	5·44	344·12	230	Jr. 2	..	..	Brucevale Lord Starbright 3rd
Avalon Starbright's Queen	56192	16.4.37	16½	5,828	6·23	363·28	230	Jr. 2	..	..	Brucevale Lord Starbright 3rd
Ballarat Orphanage, Ballarat, Jersey (5).											
Orphanage Attraction 5th	C.R.	7.6.37	21½	7,187	5·55	398·65	330	Sr. 4	425	..	Jerseylea Quality Boy
Orphanage Molly 5th	C.R.	30.5.37	13	5,246	5·13	269·20	250	Sr. 2	..	..	Orphanage Molly's Thorn
Orphanage V.C's. Molly 2nd	41413	22.6.37	22	10,122	4·88	494·18	350	Mature	324	..	Wompini V.C.
Orphanage Zaffarine 5th	58830	7.5.37	8½	5,306	5·85	310·20	290	Sr. 3	..	..	Jerseylea Quality Boy
Trawalla Clara 12th	42286	30.3.37	23½	8,966	5·22	468·04	330	Sr. 4	318	..	Kyora Substitute
Bassett-Smith, C., Kyabram, Red Poll (2).											
Ardgour Lady Bell	3300AA	24.4.37	13½	5,482	4·05	221·84	350	Mature	..	..	Victoria King David
Temperley Lady Gracious	5686AA	19.4.37	17	6,907	4·13	285·05	270	Jr. 3	208	..	Temperley Dairyman
Biggar, R., Monomeith, Jersey (1).											
Myamyn Seaspray	54343	20.5.37	15	6,206	4·66	289·39	270	Jr. 3	..	..	Glenavon Diana's Prince
Black, Mrs. A. J., Noorat, Jersey (2).											
Noorat Air Lady	36909	9.4.37	17½	7,143	5·63	402·16	350	Mature	326, 379, 370, 362		Air Lord of Banyule
Noorat Cecilia	41286	21.4.37	13	8,499	5·58	474·63	350	Mature	266, 428	..	Banyule Superlative
Black, I. S., Noorat, Ayrshire (1).											
Mount Noorat Alert 4th	29774	20.6.37	23	8,142	4·21	343·02	250	Sr. 2	..	..	Gowrie Park Scottish Patron

STANDARD HERD RECORDS—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Box, Dr. J., Estate of the Late, Whittlesea, Jersey (2).										
Toorongo Epacris ..	50900	16.5.37	17½	7,166	4·88	349·73	350	Mature	286, 285 ..	Toorongo Mercedes King
Toorongo Starlight ..	C.R.	4.4.37	13½	5,507	5·41	297·80	270	Jr. 3	234 ..	Toorongo Belle's Bonaparte
Calf, A. J., Werribee South, Jersey (1).										
Illillouette Aristocrat's Tangerine	53252	24.5.37	21	6,831	5·64	385·27	290	Sr. 3	300 ..	Illillouette Carrilla's Aristocrat
Chadderton, J. E., Hamilton, Jersey (5).										
Glen Leigh Dainty ..	48262	7.5.37	13½	5,432	5·61	304·77	250	Sr. 2	.. ..	Glen Leigh Bounty
Glen Leigh Dawn ..	33094	19.6.37	16½	6,230	4·69	292·41	350	Mature	328, 356, 393, 394, 318	Strathkellar Topthorn
Glen Leigh Dawn 2nd ..	48264	21.5.37	15	6,675	6·05	403·63	290	Sr. 3	370 ..	Glen Leigh Bounty
Glen Leigh Dolly ..	39843	19.4.37	17½	6,248	4·57	285·48	330	Sr. 4	273, 336, 341	Strathkellar Topthorn
Glen Leigh Lucy 2nd ..	48268	10.4.37	16	5,435	5·32	288·96	270	Jr. 3	301 ..	Glen Leigh Bounty
Clarke, F. W., Toora, Jersey (2).										
Elanora Lilac 2nd ..	47937	16.6.37	20	8,624	6·04	521·17	330	Sr. 4	354, 449 ..	Burnside Harmony
Maindale Jeanette ..	37895	23.5.37	16	6,962	5·33	370·73	350	Mature	431, 394 ..	Rosedale View Maid's King
Clark, P. W., Whittlesea, Jersey (2).										
Coodardy Gloria 5th ..	56871	11.5.37	24½	8,148	5·74	467·69	330	Sr. 4	360 ..	Kantara Don Juan
Coodardy Gloria 7th ..	C.R.	7.4.37	20	6,619	5·55	367·51	270	Jr. 3	243 ..	Toorongo Belle's Bonaparte
Colenso, L. W. R., Alvie, Jersey (14).										
Braemar Vanilla 3rd ..	33743	4.6.37	15½	6,107	5·32	325·12	350	Mature	324, 369, 364	Avonleigh Queenie's Twylight
Normandie Alsyke ..	58741	16.4.37	12½	3,568	5·26	187·75	230	Jr. 2	.. ..	Normandie Majestic
Normandie Buttercup 2nd..	33188	6.4.37	17	6,189	5·45	337·32	350	Mature	317, 486, 412, 447, 475, 375	Peer of Lewisham
Normandie Buttercup 6th...	58742	29.4.37	13	5,120	5·78	295·86	270	Jr. 3	230 ..	Normandie Majestic
Normandie Golden Nancy..	49868	7.5.37	14½	5,889	5·97	351·67	310	Jr. 4	352, 356 ..	Normandie Golden Peer
Normandie Hawthorn 4th..	45471	20.5.37	15	5,882	5·48	322·37	330	Sr. 4	383, 368 ..	Peer of Lewisham
Normandie Ilma 3rd ..	45472	31.3.37	20	6,327	5·78	365·79	330	Sr. 4	241, 376 ..	Peer of Lewisham
Normandie Ilma 4th ..	58745	17.4 37	13½	4,617	5·36	247·42	250	Sr. 2	.. ..	Normandie Majestic
Normandie Ilma 5th ..	58746	9 6.37	12	4,700	4·82	226·57	230	Jr. 2	.. ..	Normandie Majestic
Normandie Mayflower 4th..	33194	9.6.37	14	5,139	5·55	284·99	350	Mature	376, 286, 381, 389, 356	Normandie White Peer
Normandie Mayflower 6th..	45473	29.5.37	16½	5,945	4·94	293·48	350	Mature	274, 416, 384	Normandie Majestic
Normandie Mayflower 7th..	58747	4.5.37	8½	4,217	5·22	220·05	230	Jr. 2	.. ..	Normandie Noble Thorn
Normandie Primrose 3rd ..	45474	15.5.37	12½	4,733	5·90	279·40	350	Mature	280, 335, 325	Peer of Lewisham
*Normandie Thelma 4th ..	C.R.	14.5.37	4	3,420	5·30	181·13	230	Jr. 2	.. ..	Normandie Majestic
Coughlin, C., Catani, Jersey (3).										
Glady's Park Fairy ..	57335	6.6.37	10	4,877	5·93	289·20	270	Jr. 3	282 ..	Gladys Park Jessie's Masterpiece 2nd
Glady's Park Goldmines Beauty 3rd	48209	6.5.37	13½	7,294	5·13	374·47	310	Jr. 4	336, 265 ..	Werribee Bluebell's Masterpiece
Hylsbroke Primrose ..	48734	28.4.37	11	5,883	5·51	324·19	330	Sr. 4	.. ..	Hylsbroke Dolly's Lad
Coulthard, J., and Son, Whittlesea, Jersey (3).										
Elmwood Merry Lark ..	57189	2.5.37	11	7,088	5·87	416·03	310	Jr. 4	363 ..	Austral Valley Lord Larkspur
Jerseyholm Kirsty 28th ..	44484	6.6.37	20	6,933	5·92	410·74	290	Sr. 3	312 ..	Werribee Master Fox
Walamba Lady	C.R.	8.6.37	9	4,549	6·03	274·10	250	Sr. 2	294 ..	Banyule Airo
Crawford, Mrs. E., No. 2 Farm, Traralgon, Jersey (4).										
Balniel Jessie	51634	8.6.37	10½	4,904	5·66	277·77	270	Jr. 3	.. ..	Melrose Lord Essex
Balniel Marie	47097	6.4.37	18	5,423	5·11	277·30	290	Sr. 3	233 ..	Coolooli Rye's Mozart
Balniel Island Arcadia ..	56230	22.6.37	9½	4,377	5·32	232·84	250	Sr. 2	.. ..	Wompini Royal Master
Crystal Brook Hazel ..	47812	26.6.37	9½	5,279	5·34	281·99	330	Sr. 4	126 ..	Crystal Brook Noble
Creed, C. S., Werribee, Jersey (1).										
Jubilee Romneya ..	40435	5.4.37	25	7,473	5·16	385·82	350	Mature	256, 267, 269	Jubilee Wheatenlight
De La Rue, N. C., Weering, Jersey (4).										
Lucerne Vale Madeira 2nd..	49242	24.4.37	23½	7,002	5·86	410·59	290	Sr. 3	342 ..	Werribee Fancy Masterpiece
Lucerne Vale Madeira 3rd..	49243	9.5.37	16½	5,214	6·42	334·94	270	Jr. 3	283 ..	Lucerne Vale Grandmaster
Lucerne Vale Master's Silvermine	49248	16.5.37	22	7,394	5·59	413·47	290	Sr. 3	284 ..	Werribee Fancy Masterpiece
Lucerne Vale Masterpiece's Trixie 9th	49250	19.4.37	18	6,794	5·39	366·53	290	Sr. 3	263, 259 ..	Werribee Fancy Masterpiece
Department of Agriculture, Werribee, Red Poll (14).										
Victoria Algiers	3004A	11.6.37	25	9,566	3·90	373·13	350	Mature	248, 263, 312, 331, 342	Victoria Royal Ringer
Victoria Ambrosia ..	3891A	2.5.37	9	8,847	4·05	358·51	350	Mature	224, 305, 300	Victoria Vice Captain
Victoria Aspidistra ..	6008A	9.6.37	18	7,154	4·41	315·38	230	Jr. 2	.. ..	Victoria John Bull
Victoria Avrette	3893A	7.4.37	8½	7,358	4·75	349·25	350	Mature	296, 292 ..	Victoria Vice Captain

* 240 days in test.

STANDARD HERD RECORDS—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Department of Agriculture, Werribee, Red Poll—*continued.*										
Victoria Bodkin	6010A	31.5.37	14	6,681	4·06	271·13	270	Jr. 3	216 ..	Victoria Gallant
Victoria Bright Bess ..	3898A	26.5.37	12	7,931	4·05	321·17	350	Mature	223, 312, 314	Dominion Bright Belgian
Victoria Daffodil	6104A	13.6.37	10½	6,917	4·47	309·35	270	Jr. 3	262 ..	Dominion Bright Belgian
Victoria Gloria	5689AA	14.6.37	23½	8,123	3·76	305·48	230	Jr. 2	.. ..	Woodburn Peter Pan
*Victoria Nicotiana ..	4891A	21.4.37	..	5,880	3·78	222·48	270	Jr. 3	240 ..	Dominion Bright Belgian
Victoria Peach	6025A	12.6.37	14	5,583	4·26	237·87	230	Jr. 2	.. ..	Victoria Gallant
Victoria Pebble	6026A	27.5.37	21	6,132	4·53	277·85	230	Jr. 2	.. ..	Woodburn Peter Pan
Victoria Philopena ..	6028A	19.6.37	25	7,649	4·15	317·10	230	Jr. 2	.. ..	Woodburn Peter Pan
Victoria Prudence ..	6030A	19.6.37	14	5,909	4·66	275·11	230	Jr. 2	.. ..	Woodburn Peter Pan
Victoria Zephyr	3043A	8.5.37	5	6,405	4·04	258·73	350	Mature	265, 285, 259, 327	Vice Regal
Desmond, J. J., Rochester, Jersey (1).										
Macroom Edna 4th ..	53911	19.4.37	25	8,532	5·28	450·25	290	Sr. 3	358 ..	Glen Alvie Statesman
Dookie Agricultural College, Dookie, Ayrshire (3).										
Dookie Dancer	Vol. 30	19.6.37	18½	6,972	5·06	352·76	230	Jr. 2	.. ..	Tregorland Indispensible
Dookie Floss	23668	9.5.37	19½	7,889	4·22	333·00	350	Mature	406, 341, 444, 347	Longerenong Laurie
Dookie Peony	Vol. 30	22.6.37	18½	8,555	4·43	379·15	250	Sr. 2	.. ..	Longerenong Baron
Dwyer, G., Balwyn, Jersey (1).										
Jubilee Freezia	40430	20.6.37	16	6,648	4·80	319·07	350	Mature	206, 353, 372, 425	Jubilee Wheatenlight
Fairchild and Clutterbuck, Tinamba, Jersey (2).										
Vaucluse Kerchele ..	46569	14.6.37	20	7,020	5·40	379·05	350	Mature	290, 361 ..	Somerville Concentration
Vaucluse Princess ..	55699	17.4.37	18½	6,192	5·89	364·47	250	Sr. 2	253 ..	Paisley Master
Fixter, A., Boisdale, Guernsey (1).										
Avonview Dulcie.. ..	2537	20.6.37	21	7,617	5·62	427·76	350	Mature	294, 317, 344, 348, 457	Melbourne Sandboy 6th
Foster Bros., Boisdale, Jersey (4).										
Boisdale Blonde 2nd ..	51840	8.5.37	8	3,808	5·58	212·48	290	Sr. 3	263 ..	Gladiator of Springhurst
Boisdale Brunette 4th ..	47287	19.6.37	13	5,130	5·40	277·06	310	Jr. 4	246, 246 ..	Gladiator of Springhurst
Boisdale Moonshine ..	51849	12.6.37	8½	3,852	5·46	210·28	270	Jr. 3	245 ..	Gladiator of Springhurst
Myrtleview Sweet Maid ..	41208	11.6.37	7½	4,727	5·42	256·26	350	Mature	311, 284, 383	Summerhill Economist
Fraser, G. A., Addington, Ayrshire (1).										
Bonnie Doon Maisie ..	21061	30.4.37	21	9,258	4·56	422·50	350	Mature	297 ..	Carlo of the Valley
Gay, R. G., and Son, North Devon, Jersey (2).										
Elm Grove Jessie Fowler 3rd	43736	14.6.37	21	9,975	4·08	496·73	350	Mature	289, 401 ..	Warenda Ragtime Dominan
Elm Grove Silvermine ..	39643	18.4.37	9	8,469	5·88	498·04	350	Mature	310, 426, 414	Warenda Ragtime Dominant
Goddard, J. H., Cora Lynn, Ayrshire (1).										
Inverurie Rayda	27419	31.3.37	18	7,591	3·81	289·38	270	Jr. 3	393 ..	Oakbank Radio
Gregg, V., Whittlesea, Jersey (2).										
Stoneycroft Plum ..	37438	26.4.37	14½	5,692	5·33	303·11	350	Mature	283, 319, 357, 372, 320	Kantara Don Juan
Stoneycroft Una 5th ..	50651	25.4.37	13½	6,161	4·84	298·06	330	Sr. 4	289, 265 ..	Toorongo Maori Chief
Handbury, J. E., and Son, No. 1 Farm, Toora, Jersey (4).										
Tooravale Bettws-y-Coed ..	59761	26.6.37	20	6,975	5·76	401·89	230	Jr. 2	.. ..	Kyora Hero
Tooravale Lassie 9th ..	42253	18.4.37	20	7,316	6·41	469·11	350	Mature	294, 344, 388, 413	King's Vale Monica 14ths Son
Tooravale Princess 6th ..	34055	10.4.37	24	9,204	6·85	630·04	350	Mature	263, 501, 434	Tooravale Goldspeck
Tooravale Princess 18th ..	59769	4.4.37	23	7,755	6·49	503·39	250	Sr. 2	.. ..	King's Vale Monica 14ths Son
Handbury, J. E., and Son, No. 2 Farm, Toora, Jersey (2).										
Tooravale Lassie Fowler 12th	42256	18.5.37	19½	7,030	5·46	384·13	350	Mature	235, 220, 394, 357	Tooravale Goldspeck
†Tooravale Starleigh 8th ..	46480	25.4.37	4	1,920	5·53	106·23	350	Mature	236, 313, 361	King's Vale Monica 14ths Son
Harvey, T., Boisdale, Jersey (3).										
Jerseyholm Daisy 18th ..	40375	18.4.37	25	7,650	5·10	390·33	330	Sr. 4	392, 353 ..	Werribee Master Expert
Jerseyholm Empress 21st ..	34063	16.4.37	16½	5,996	5·24	314·24	350	Mature	276, 307, 336, 360, 342	Brucevale Lord Island Fancy
Jerseyholm Empress 44th ..	53361	23.4.37	29	8,474	4·81	407·35	250	Sr. 2	.. ..	Jerseyholm Master's Fox 6th

* 240 days in test (sold). † 210 days in test.

STANDARD HERD RECORDS—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Henderson, W., Grasmere, Ayrshire (10).										
*Carracoorte Balm 17th ..	27002	13.6.37	4	6,225	4·15	258·54	350	Mature	318, 225 ..	Carracoorte Gerty's Producer
Carracoorte Balm 23rd ..	Vol. 30	24.4.37	8½	6,065	4·34	263·48	250	Sr. 2	.. ..	Carracoorte Gerty's Producer
Carracoorte Blanche 9th ..	25903	11.4.37	16½	6,503	4·82	313·60	350	Mature	286, 412, 208	Carracoorte Pilot
Carracoorte Briar Bud ..	23546	9.4.37	12	6,855	4·35	298·32	350	Mature	286, 383, 330, 451, 296	Carracoorte Lochiel
Carracoorte Brownie 24th..	27005	6.6.37	9½	5,307	3·87	205·32	350	Mature	252, 192 ..	Carracoorte Gerty's Producer
Carracoorte Brownie's Belle	23547	31.3.37	13½	6,828	4·96	338·43	350	Mature	260, 355, 390, 483	Carracoorte Gerty's Producer
Carracoorte Bud 7th ..	25904	16.5.37	10½	6,406	4·14	265·31	350	Mature	256, 317, 280	Blue Bell's Pride of Glecourt
Carracoorte Iris 17th ..	24695	15.4.37	15½	7,190	4·52	325·31	350	Mature	245, 269, 157	Carracoorte Maiden's Laddie
Carracoorte Sparkle 12th ..	Vol. 30	14.4.37	17½	5,729	4·25	243·23	270	Jr. 3	.. ..	Carracoorte Bluebell's Favourite
Carracoorte Viola 20th ..	25906	8.4.37	14	6,897	4·41	304·26	350	Mature	406, 269 ..	Carracoorte Pilot
Hercus, T. B., Hayanmi, Jersey (1).										
Mologa Magpie	Vol. 25	26.6.37	15½	5,590	4·56	254·82	230	Jr. 2	.. ..	Mologa Goldfinder
Hore, E., Leitchville, Jersey (3).										
Ballara Lassie 3rd ..	42861	26.5.37	27	8,501	5·73	486·75	350	Mature	442, 487, 474	Brucevale Lord Fancy Madeira
Milvue Madeira's Chimes ..	54142	29.3.37	15	6,939	5·38	373·16	290	Sr. 3	244, 229 ..	Balcairn Mabel's Master
Milvue Twylish Bettwys ..	58470	26.6.37	21	7,533	5·07	382·03	270	Jr. 3	367 ..	Milvue Christmas Melody
Huffer, J. A., Gormandale, Jersey (4).										
Glen Valley Blossom ..	Vol. 25	6.5.37	12½	3,947	5·86	231·27	230	Jr. 2	.. ..	Glen Valley Sir Roger 2nd
†Glen Valley Handsome Girl	37608	14.6.37	..	5,190	5·53	287·13	350	Mature	323, 320, 344, 359	Melrose Clementine 2nd Masterpiece
‡Glen Valley Mignonette ..	C.R.	6.5.37	..	2,610	5·81	151·71	230	Jr. 2	.. ..	Glen Valley Sir Roger 2nd
§Glen Valley Satisfaction ..	57475	24.4.37	..	4,455	5·20	231·48	230	Jr. 2	.. ..	Brucevale Wyandotte's King
Hurrey, W. H., Koonwarra, Jersey (1).										
Kooreena Lady 5th ..	49034	12.6.37	15½	7,191	5·04	362·40	290	Sr. 3	360 ..	Kooreena Carrie 3rds Delegate
Hutchison, H. McD., Yan Yean, Jersey (2).										
Eulomo Duchess	52666	5.5.37	17	6,907	6·42	443·27	270	Jr 3	249 ..	Melrose Clementine 2nds Masterpiece
Melrose Graceful Duchess 47th	38571	21.4.37	20½	7,184	5·63	404·19	350	Mature	372, 368, 467, 364	Melrose Clementine 2nds Masterpiece
King, H. W., Warragul, Jersey (2).										
Karoola Matilda	C.R.	13.6.37	10½	4,880	5·16	251·76	230	Jr. 2	.. ..	Glen Valley Royal Master
Karoola Nancy	57964	12.6.37	13½	5,262	5·96	313·66	290	Sr. 3	288 ..	Karoola Timekeeper
Lane, K. D., Merino, Jersey (3).										
Dalray Lady 2nd ..	43594	13.5.37	14½	6,452	5·19	334·94	330	Sr. 4	.. ..	King's Vale Brunette 23rds Lad
Dalray Smile Away ..	37717	9.4.37	27½	7,851—4·86		381·77	350	Mature	.. ..	Dalray Twylish Prince
Jubilee Foxglove ..	29345	29.3.37	13½	5,403	4·13	223·23	350	Mature	279, 338 ..	Jubilee Whatlight
Le Noury, E., Werribee South, Guernsey (1).										
Werribee Princess Pat ..	2639	11.4.37	18	7,394	4·70	347·75	350	Mature	324, 294, 376	Yarraview Saxon
Longerenong Agricultural College, Dooen, Ayrshire (1).										
*Longerenong Acacia Elata	26544	6.4.37	4	4,485	4·46	200·19	350	Mature	204, 192, 249, 259	Longerenong Baron
Lyon, C. G., Heidelberg, Jersey (9).										
Southdean Disdain ..	55240	9.5.37	10½	4,514	5·71	257·97	230	Jr. 2	.. ..	Banyule Triplane
Banyule Ettie 16th ..	37772	7.5.37	18	7,571	5·15	389·70	350	Mature	.. ..	Banyule Superstrain
Banyule Molly 49th ..	47122	25.6.37	14	5,819	5·14	299·32	270	Jr. 3	263 ..	Oxford Beau's Pretty Oxford (Imp.)
Banyule Silvermine 79th ..	37783	20.6.37	21	7,938	5·28	419·28	350	Mature	274, 425 ..	Banyule Airo
Banyule Silvermine 88th ..	42890	7.4.37	20	8,252	4·61	380·19	290	Sr. 3	359 ..	Oxford Beau's Pretty Oxford (Imp.)
Banyule Silvermine 89th ..	42891	5.5.37	17½	6,821	4·93	336·03	270	Jr. 3	305 ..	Oxford Beau's Pretty Oxford (Imp.)
Banyule Silvermine 90th ..	42892	19.6.37	17	7,629	5·17	394·23	290	Sr. 3	337 ..	Oxford Beau's Pretty Oxford (Imp.)
Banyule Silvermine 92nd ..	47126	21.6.37	15	5,550	5·30	293·92	270	Jr. 3	301 ..	Oxford Beau's Pretty Oxford (Imp.)
Banyule Silvermine 93rd ..	47127	23.4.37	13½	5,715	4·83	276·32	250	Sr. 2	254 ..	Banyule Weft
Macauley, C. W., Rochester, Jersey (1).										
Taranah Fair Lady ..	42116	31.5.37	15	6,393	4·94	315·96	350	Mature	286, 344, 400, 361	Taranah Submarine
McCosh, S. J., Wandin North, Jersey (1).										
Heathermont Modesty 2nd	57665	9.6.37	11½	4,970	5·78	287·20	230	Jr. 2	.. ..	Glen Valley Masterman

* 240 days in test. † 243 day in test (sold). ‡ 210 days in test (sold). § 240 days in test (sold).

Standard Herd Records—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk. lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
McDougall, J., Byaduk, Jersey (3).										
Park View Fairy Lady ..	50083	30.3.37	N.O.C.	5,711	5·17	295·44	290	S. 3	275 ..	Staghorn Fancy's Observer 2nd
Park View Lady May ..	41514	18.5.37	13½	5,711	5·08	289·93	350	Mature	280, 310 ..	Grangelea Royal
Park View Mayflower 5th..	58924	9.4.37	17½	5,903	4·89	288·44	270	Jr. 3	.. ..	Staghorn Fancy's Observer 2nd
McErvale, I., and Sons, Camperdown, Jersey (8).										
Clarendon Eyre Primrose ..	39256	28.4.37	17½	6,527	4·45	290·45	350	Mature	385, 341, 364	Clarendon Eyre Eminent's Bing Boy
Cumnock Astra	57024	30.4.37	15½	5,552	4·76	264·08	290	Sr. 2	.. ..	Cumnock Fancy Masterpiece
Cumnock Cinnamon ..	57025	24.4.37	12	4,236	5·71	242·00	330	Sr. 4	.. ..	Wompini Grandmaster
Cumnock Delicacy ..	C.R.	29.4.37	19	6,129	5·39	330·41	310	Jr. 4	.. ..	Cumnock Masterman
Cumnock Fancy Mona ..	57026	20.4.37	17	5,283	5·64	298·10	350	Mature	.. ..	Cumnock Fancy Masterpiece
Cumnock Lone Girl ..	47853	28.4.37	21½	6,630	4·72	313·07	350	Mature	339 ..	Cumnock Fancy Masterpiece
Hazeldale Pearlie Maid ..	29123	29.4.37	17	5,192	5·27	273·60	350	Mature	344, 336, 318, 281	Lord Mannikin of Hazeldale
Kameruka Ringdove ..	40472	18.4.37	19½	7,364	5·16	379·99	350	Mature	279 ..	Banyule Amplifier
McNabb, G. A., and Son, Irrewillipe East, Jersey (5).										
Maxon Chieftain's Comfrey 2nd	54016	14.5.37	13	5,808	5·66	328·63	270	Jr. 3	201 ..	Maxon Chieftain
Maxon Countess Light ..	49425	26.5.37	15	6,584	6·48	426·90	290	Sr. 3	331, 390 ..	Maxon Count Graceful
Maxon Count's Lodestone..	40932	30.5.37	18	6,981	6·70	467·98	350	Mature	341, 356, 360, 416	Maxon Count Graceful
Maxon Count's Marie ..	49424	9.5.37	15½	5,422	5·77	312·89	290	Sr. 3	210, 331 ..	Maxon Count Graceful
Maxon Count's Pansy ..	40933	21.4.37	14½	6,434	5·71	367·60	350	Mature	286, 384, 365, 291	Maxon Count Graceful
Meaklim Bros., Mooroopna, Dairy Shorthorn (3).										
Drumneil Fairy	D.S.H.B.	28.4.37	36	11,765	4·02	473·48	350	Mature	410, 432 ..	Bounty of Darbalara
Drumneil Nellie 2nd ..	D.S.H.B.	19.4.37	25	8,730	4·27	372·87	350	Mature	338 ..	Drumneil Bounty 2nd
Drumneil Nellie 3rd ..	D.S.H.B.	18.5.37	23½	10,770	3·41	367·36	310	Jr. 4	328, 453 ..	Willow Park Reformer
Mesley, W. T., Dalyston, Jersey (1).										
Warenda Ragtime 10th ..	C.R.	2.5.37	14	5,847	5·85	342·07	250	Sr. 2	.. ..	Warenda Perpetuate
Mitchell, R. H., Linton, Jersey (4).										
Brucevale King Lark's Satisfaction	37947	18.6.37	17½	6,323	6·62	418·72	350	Mature	336, 389, 381	Werribee Wyandotte's King
Clifford Farm Dawn ..	34263	24.4.37	23	7,804	5·71	445·60	350	Mature	508, 518, 447	Clifford Farm Eliminator
Clifford Farm Lorraine ..	56819	20.4.37	9	3,341	5·17	172·69	230	Jr. 2	.. ..	Wompini V.C.
Clifford Farm Misty Maiden	52273	9.5.37	15½	6,701	5·84	391·07	290	Sr. 3	299 ..	Clifford Farm Chieftain
Moore, J., and Co., Yarram, Jersey (5).										
Tooloonook Angler's Bell 2nd	46461	24.6.37	4½	5,879	4·29	252·23	350	Mature	310, 314, 337, 270	Beauty 4ths Command of Somerville
Tooloonook Boltonia 5th ..	46463	5.4.37	14½	5,513	4·91	270·42	350	Mature	316, 323, 283	Tooloonook Clianthus Hero
Tooloonook Molly 11th ..	59757	29.3.37	14½	4,956	4·85	240·23	230	Jr. 2	.. ..	Tooloonook Angler's Hero
Tooloonook Trixie 11th ..	42250	22.6.37	11	6,884	4·37	300·88	350	Mature	254, 286, 327	Heroic of Somerville
Tooloonook Virginia 2nd ..	46475	3.5.37	11½	6,708	5·04	338·26	350	Mature	178, 230, 333, 289	Tooloonook Carob's Hero
Nicholas, M. A., Sherbrooke, Jersey (3).										
Brampton Champion's Girl (Imp.)	56039	19.6.37	26	8,171	5·59	456·53	230	Jr. 2	.. ..	Brampton Champion's Son of
Brampton Champion's Mary (Imp.)	56041	16.4.37	17½	5,873	5·90	346·47	230	Jr. 2	.. ..	Brampton Champion's Son of
Selsey Wyandotte ..	41949	23.6.37	22½	7,581	6·88	521·63	350	Mature	319, 474 430,	Werribee Wyandotte's King
Noble, T. M., and Sons, Maffra, Jersey (3).										
Finchley Bluebell ..	57277	24.4.37	21	6,408	5·50	352·17	250	Sr. 2	.. ..	Werribee Lord Burnham
Finchley Handsome Lady..	37993	20.5.37	27	8,180	7·11	581·74	350	Mature	420, 439, 652, 586	Werribee Lord Burnham
Finchley Handsome Lady 2nd	43886	20.4.37	23	7,514	6·71	503·84	350	Mature	276, 415, 480	Finchley Lord Harmony
Norman, J. G., Pennyroyal, Jersey (1).										
Banaview Lilac Domino 2nd	51635	13.6.37	19½	6,467	6·03	389·69	290	Sr. 3	296, 447 ..	Banyarra Novar
Payne, A. E. T., Lilydale, Guernsey (1).										
Yarraview Charm ..	5163	13.4.37	16½	7,236	5·21	377·04	270	Jr. 3	325 ..	Camilla's Majestic of Maple Lodge (Imp.)
Powell, T. S., Mansfield, Jersey (3).										
Monterey Mariposa's Lark..	49603	15.6.37	20	8,537	5·66	482·85	290	Sr. 3	355 ..	Rosecliffe Mariposa's Master
*Mornmoot Myth ..	33141	6.5.37	..	7,575	5·12	387·69	350	Mature	436, 491 ..	Choirmaster of Banyule
Warenda Charmain 4th ..	29149	31.5.37	22	8,399	5·89	495·10	350	Mature	456 ..	Kinnor of Banyule
Read, J. D., Springhurst, Jersey (16).										
Springhurst Angelica Alsyke	59477	2.5.37	15	5,402	5·53	298·82	230	Jr. 2	.. ..	Bellefaire Seaborn Successor
Springhurst Angelica Tomato	55264	6.4.37	19½	6,615	5·06	334·61	230	Jr. 2	.. ..	Bellefaire Seaborn Successor
Springhurst Aniline Narcissus	55270	22.4.37	17½	6,293	5·47	344·20	230	Jr. 2	.. ..	Springhurst Design's Analyst

* 210 days in test (withdrawn sick).

Standard Herd Records—*continued.*

Name of Cow.	Herd Book No.	Date of Calving.	Milk last day of Test. lb.	Milk lb.	Average Test.	Butter Fat. lb.	Standard required.	Class.	Previous Yields of Butter Fat.	Sire.
Read, J. D. Springhurst, Jersey, *continued.*										
Springhurst Blonde Aconite	50622	9.5.37	14	4,970	6·16	305·97	250	Sr. 2	436 ..	Bellefaire Seaborn Successor
Springhurst Blonde Alyske	50623	19.4.37	19½	7,200	6·00	431·69	250	Sr. 2	269 ..	Bellefaire Seaborn Successor
Springhurst Blonde Romneya	55272	4.4.37	19	6,215	6·07	377·48	230	Jr. 2	.. ..	Bellefaire Seaborn Successor
Springhurst Blonde Tomato	46180	12.4.37	19½	8,417	5·69	478·94	290	Sr. 3	379, 415 ..	Bellefaire Seaborn Successor
Springhurst Blonde Tulip ..	55273	7.4.37	12	4,463	5·93	264·55	230	Jr. 2	.. ..	Bellefaire Seaborn Successor
Springhurst Blonde Yarran	55274	7.4.37	19	6,393	5·54	354·41	230	Jr. 2	.. ..	Bellefaire Seaborn Successor
Springhurst Coronation Narcissus	50625	2.4.37	18½	7,487	5·72	428·02	250	Sr. 2	317 ..	Springhurst Design's Analyst
Springhurst Coronation Nightshade	46183	16.4.37	18½	8,523	5·57	474·45	350	Mature	376, 411, 476	Design's Ruler (Imp.)
Springhurst Hussy Alsyke..	50630	19.5.37	15	5,965	6·75	402·63	250	Sr. 2	285 ..	Bellefaire Seaborn Successor
Springhurst Sybil Narcissus	46191	19.6.37	27½	10,553	5·32	561·88	330	Sr. 4	369, 534, 543	Bellefaire Seaborn Successor
Springhurst Sybil Nerine ..	46192	11.5.37	29½	11,105	6·12	679·93	310	Jr. 4	461, 543 ..	Bellefaire Seaborn Successor
Springhurst Sybil Soya ..	50634	18.4.37	23	8,295	5·33	442·12	270	Jr. 3	392 ..	Bellefaire Seaborn Successor
Springhurst Sybil Tomato..	46194	30.4.37	29½	9,890	5·45	539·36	330	Sr. 4	431, 520, 496	Bellefaire Seaborn Successor
Richardson, W. S., Bacchus Marsh, Jersey (1).										
Uphaven Miss Grant 2nd ..	55677	12.6.37	16½	5,853	5·19	304·00	330	Sr. 4	318 ..	Wompini Royal Master
Salesian College, Sunbury, Friesian (3).										
Ingolston Ena	4093	18.4.37	19	12,089	3·17	383·72	350	Mature	281 ..	Greenvale Ideal Segis
Rupertswood Jessy ..	C.R.	25.4.37	25	9,653	3·31	319·34	250	Sr. 2	.. ..	Braemore Sylvia's Triumph
Rupertswood Lady Griselda	C.R.	26.6.37	25½	8,805	3·44	303·03	230	Jr. 2	.. ..	Victoria Freedom
Sebire, T., Wandin Yallock, Jersey (2).										
Leven Brae A'do Rose ..	58168	19.6.37	5½	5,954	6·01	358·13	250	Sr. 2	235 ..	Werribee Mikado
*Wandin Butterfat ..	55754	14.5.37	4	3,180	6·24	198·39	270	Jr. 3	359 ..	Leven Brae Kingdom
Steele, R. G., Tandarra, Dairy Shorthorn (2).										
Willow Park Butterfly 7th..	D.S.H.B.	23.5.37	16	6,710	4·33	290·36	250	Sr. 2	.. ..	Willow Park Lustre 3rd
Willow Park Queenie 34th..	D.S.H.B.	20.4.37	4½	4,349	4·74	206·14	230	Jr. 2	.. ..	Willow Park Lustre 3rd
Stoney, W. B., Drouin West, Jersey (1).										
Tarago Foxglove 2nd ..	50769	10.4.37	18	6,291	4·69	295·08	330	Sr. 4	233, 243 ..	King's Vale Dolly 4ths Son
Thomas and Taylor, Hamilton, Aryshire (5).										
Carracoorte Betsy 22nd ..	24674	17.5.37	26	8,058	4·88	393·30	350	Mature	313, 389, 355	Blue Bell's Pride of Glencourt
Carracoorte Bunty 16th ..	24684	2.4.37	18½	7,818	5·40	422·45	350	Mature	295, 384, 353	Carracoorte Pilot
Carracoorte Lillian 7th ..	27012	17.6.37	19	6,372	5·18	330·26	330	Sr. 4	341, 292 ..	Carracoorte Panic
Jennewar Beauty ..	Vol. 30	18.6.37	20	6,503	4·45	289·63	230	Jr. 2	.. ..	Denbigh Ace
Jennewar Sylvia	29673	12.4.37	21	6,609	4·30	283·88	250	Sr. 2	.. ..	Denbigh Ace
Tomasetti, B. G., Drouin West, Ayrshire (1).										
Glencorren Marigold ..	27245	9.4.37	23	9,356	3·75	350·82	330	Sr. 4	337, 285 ..	Scotswood Flashlight
Vagg, E. J., Leongatha, Jersey (3).										
Bonnay Amanda's Betty ..	C.R.	9.5.37	15	5,277	5·15	271·80	230	Jr. 2	.. ..	Jerseyinn Edith's Masterpiece
Bonnay Amanda's Marina..	56463	1.5.37	12	5,378	6·03	324·45	250	Sr. 2	.. ..	Bonnay Carrie's Master
Bonnay Mystery's Cyntha..	51868	14.5.37	16	6,435	5·25	337·86	290	Sr. 3	283 ..	Jerseyinn Edith's Masterpiece
Vaughan Bros., Girgarre, Jersey (3).										
Lynroy Jean 5th.. ..	Vol. 25	19.6.37	18	7,325	5·31	388·97	230	Jr. 2	.. ..	Werribee Laverock
Lynroy Lady Dolly ..	C.R.	20.5.37	16	5,948	6·32	375·71	230	Jr. 2	.. ..	Werribee Laverock
Lynroy Vanilla	38466	22.5.37	16½	7,472	6·02	449·88	350	Mature	370, 380, 386	Sherborne Wyandotte King
Wade, W. J., Stratford, Jersey (1)										
Inverbroom Ruby's Bunty	57763	3.5.37	10	4,650	4·89	227·60	230	Jr. 2	.. ..	Grangelea Butterboy 3rd
Walker, C. S., Swan Hill, Jersey (2).										
Gum Park Cream Lass ..	44232	24.6.37	20	8,566	4·87	416·75	350	Mature	266, 265, 302	Starlight of Bellaire
Warwick Vanilla	59946	9.6.37	19	5,646	5·35	302·22	250	Sr. 2	.. ..	Glen Iris Golden Lord
Warragul High School, Warragul, Red Poll (3).										
Gipps Lady Judith ..	4627A	1.5.37	13½	5,501	3·78	207·75	230	Jr. 2	.. ..	Blackwood Butler
Gipps Thera	2188A	6.4.37	18	6,189	3·59	222·07	350	Mature	262, 211, 255, 302, 289	Woodburn Laureate
Gipps Ultima	3662A	10.5.37	8½	5,510	3·99	219·90	310	Jr. 4	248, 201 ..	Gipps Byron
Watson, K., Pakenham Upper, Jersey (3).										
Goronga Farm Aviation ..	53001	26.6.37	14	6,290	5·29	332·61	290	Sr. 3	318 ..	Goronga Farm Avro Avian
Goronga Farm Reputed Starbright	57524	19.4.37	17	5,227	5·21	272·57	230	Jr. 2	.. ..	Somerville Reputed King
Talybont Modesty ..	55407	17.4.37	13	4,019	6·16	247·59	230	Jr. 2	.. ..	Mornmoot Montrose
Williams, F. A., Bamawm Extension, Jersey (1).										
Bamawm Bonny Lass 2nd..	Vol. 25	20.4.37	20	6,317	6·22	393·07	250	Sr. 2	.. ..	Bamawn Leon

* 240 days in test.

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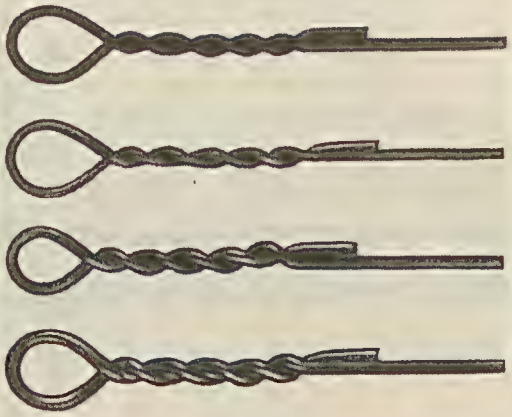

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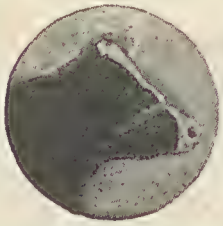

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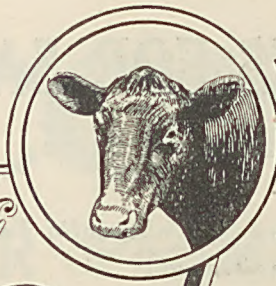

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Maintained for Milk and Beef

at the State Research Farm, Werribee.

BULL CALVES

Six For Sale

No. 1. VICTORIA VALMAR. (A, C.R.) Born 29th May, 1936 .. *Price* 20 guineas
Sire: Chandpara Valentine (762 AA). *Dam:* Victoria Marah (3915 A). f.o.r. Werribee
Victoria Marah produced 336 lb. butter-fat as a Sr. 4.

No. 2. VICTORIA PONTIFF. (AA, C.R.) Born 14th January, 1937 .. *Price* 25 guineas
Sire: Chandpara Valentine (762 AA). *Dam:* Victoria Rosary (2759 AA). f.o.r. Werribee
Victoria Rosary produced 299 lb. butter-fat in 273 days as Jr. 4.

No. 3. VICTORIA PHILIP. (A, C.R.) Born 19th June, 1937 .. *Price* 17 guineas
Sire: Victoria Donald (Vol. 9). *Dam:* Victoria Philopena (Vol. 9) f.o.r. Werribee.
Victoria Philopena has produced 317 lb. butter-fat as a Jr. 2 in 273 days.

No. 4. VICTORIA ARMOUR. (A, C.R.) Born 15th December, 1937 *Price* 13 guineas
Sire: Chandpara Valentine (762 AA). *Dam:* Victoria Amaranth (3006 A). f.o.r. Werribee
Victoria Amaranth has produced 354 lb. butter-fat in 273 days.

No. 5. VICTORIA GUARDIAN. (A, C.R.) Born 3rd February, 1938 .. *Price* 12 guineas
Sire: Chandpara Valentine (762 AA). *Dam:* Victoria Bellalae (2304 A). f.o.r. Werribee
Victoria Bellalae has produced 447 lb. butter-fat in 273 days.

No. 6. VICTORIA BANKER. (A, C.R.) Born 10th February, 1938 .. *Price* 10 guineas
Sire: Woodburn Peter Pan (Imp. in utero) (1504 AA). *Dam:* Victoria Bursary (4884A). f.o.r. Werribee
Victoria Bursary produced 309 lb. butter-fat in 273 days as Jr. 3.

Prices are based on the average butter-fat production of the dam in 273 days, except in the case of progeny of heifers without completed test, the price then being 10 guineas.

An amount of 2 guineas per quarter maintenance has been added to calves 3 months old and over.

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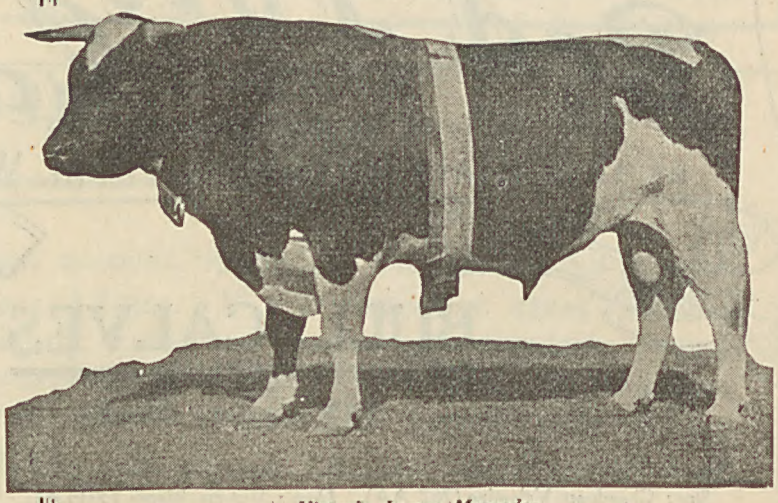
Reserve Champion 1928, 1929, and 1934.



Victoria Joyous Mercedes

Dam:

Victoria Joybell, produced 15,387 lb. milk, 3·67 % test, 565 lb. butter-fat in 273 days, twice-a-day milking.

Daughters:

His eight (8) first-calf daughters have averaged 9,930 lb. milk, 3·73 % test, 370 lb. butter-fat in 273 days on first lactations.

INSPECTION -- INVITED --

1. VICTORIA MARQUIS (C.R.) *Born 22nd November, 1937*
Sire: Rupertswood Inka Jo (1732) *Dam:* Victoria Joyous Piebe (3259)
Victoria Joyous Piebe has produced 546 lb. butter-fat in 273 days.
Price: **21 guineas** f.o.r. Werribee

2. VICTORIA BARITONE (C.R.) *Born 2nd December, 1937*
Sire: Rupertswood Inka Jo (1732) *Dam:* Victoria Joyous Song (Vol. 14)
Victoria Joyous Song is on her first lactation. Her dam produced 527 lb. butter-fat in 273 days.
Price: **10 guineas** f.o.r. Werribee

3. VICTORIA CORAL (C.R.) *Born 5th February, 1938*
Sire: Rupertswood Inka Jo (1732) *Dam:* Victoria Choree (5105)
Victoria Choree produced 357 lb. butter-fat in 273 days as Sr. 3.
Price: **11 guineas** f.o.r. Werribee

4. VICTORIA EMPEROR (C.R.) *Born 11th March, 1938*
Sire: Victoria Mikado (New Vol.) *Dam:* Victoria Woodcrest Daisy (5112)
Victoria Woodcrest Daisy has produced 425 lb. butter-fat in 273 days as Jr. 4.
Price: **13 guineas** f.o.r. Werribee

For further particulars apply to

The Director of Agriculture, Melbourne,
or The Manager, State Research Farm, Werribee.

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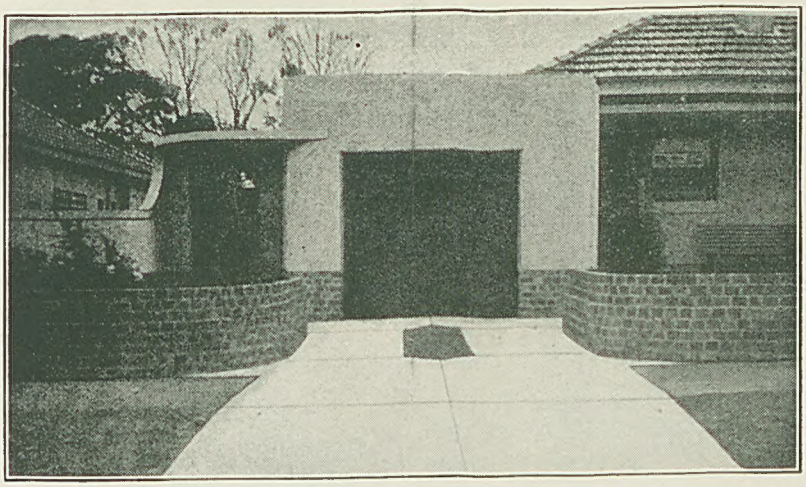

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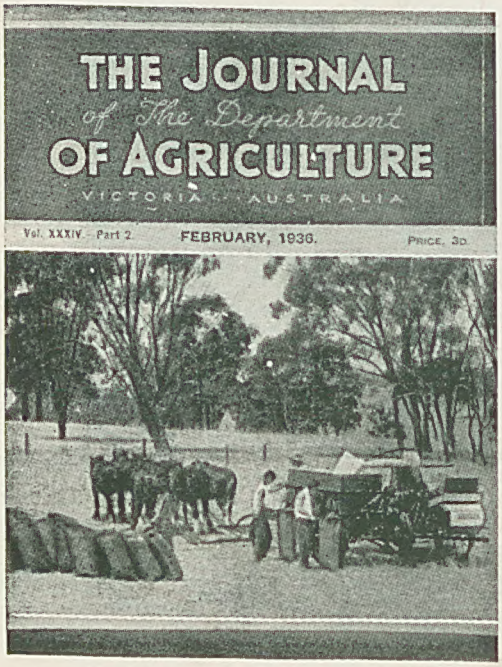

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